1977

ENVIRONMENTAL MONITORING AND BASELINE DATA

Compiled under the

SMITHSONIAN INSTITUTION

ENVIRONMENTAL SCIENCES PROGRAM

Temperate Studies

Rhode River, Maryland

Edited by David L. Correll

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INTRODUCTION

The formation of the Chesapeake Bay Center for Environmental Studies was initiated in 1964 and land acquisition as well as facilities development is still going on. At present the center has approximately 2,600 acres of land (approximately 4 square miles) and controls the water frontage and near water portions of a large part of the Rhode River watershed. The Rhode River is a small subestuary of the Chesapeake Bay (approximately 0.1 percent of the open water area of the bay, see map number 1). It is large enough to have the complexities and many of the properties typical of larger subestuaries of the bay, but small enough to be studied in depth. The Rhode River has an open water area of approximately 2 square miles and a watershed of approximately 13 square miles.

The goals of the Rhode River Program are (1) to establish an understanding of the operation of this ecosystem with special emphasis upon the interaction of the watershed and the estuary and (2) to monitor long-term changes in the ecosystem and relate them to the activities of man as well as to other variations in environmental conditions.

The watershed of the Rhode River is actually composed of about twelve subwatersheds, each of which contains a different pattern of land use. Of these subwatersheds a number have a topography which lends itself to monitoring the composition and volume of the runoff water. These runoff waters have a fundamental impact upon the corresponding portions of the Rhode River estuary. Map number 2 outlines the boundaries of the subwatersheds and Table 1 details the area and land use composition of the subwatersheds monitored in 1976.

Another major interaction of the Rhode River ecosystem is the exchange of water masses with the open Bay. This maintains the salinity gradient and determines many of the properties of the estuary. Map number 3 illustrates the aquatic system with channel axes and axial distances marked. Map number 4 illustrates the estuarine sampling stations and transects in the Rhode River. These are the stations used for integrated data collection for the development of estuarine models.

In 1976 a research project was initiated on the Choptank River. A map shows the stations used in this study. The major goal of this work was to compare submerged vascular plant data and environmental data at these sites with Rhode River data. In 1977 a research project was initiated on the Patuxent River. A map shows the stations used in this study. The goal of this study was to test how well we could predict the composition of watershed runoff from Patuxent basins by using statistical models based on Rhode River data.

In 1966 the Smithsonian Institution was given the first of a group of Islands in Chesapeake Bay called the Poplar Island Group (map 7). Some research has been conducted there over the intervening years and will be included in this report.

This report is primarily a guide to the research data collected during 1977. In the interest of practicality, all data which is currently scheduled to be included in the Center's computer data bank on magnetic tape will only be described sufficiently for interested parties to identify what is in the bank, whether it would be of interest to retrieve it, and how to in fact retrieve it. Other categories of data will be handled as in previous yearly reports.

Figure 1. Map of the Chesapeake Bay area. An arrow points to the location of the Rhode River subestuary. The Poplar Islands are enclosed in a circle.

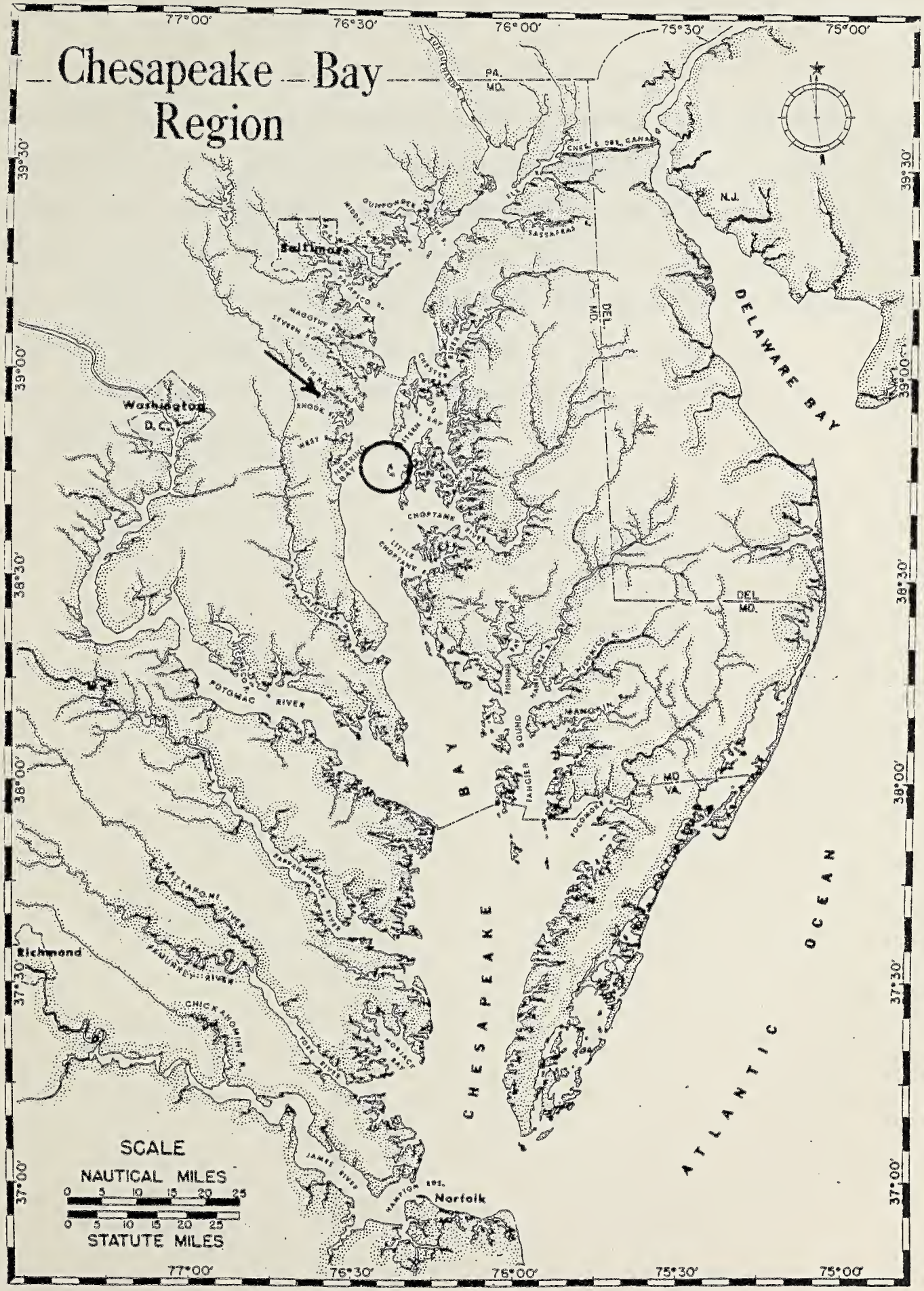
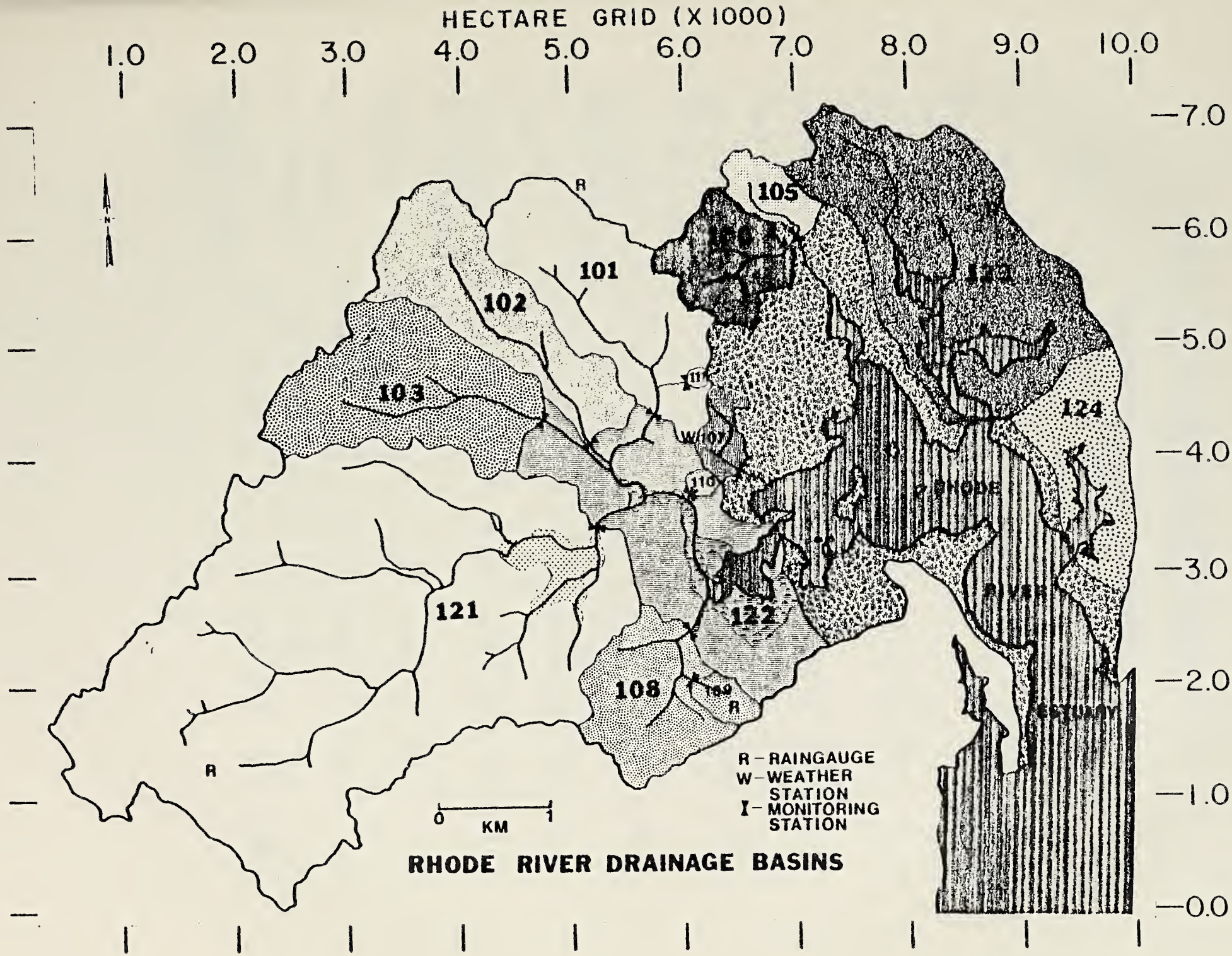

Chesapeake Bay Region
77°00'
76°30'
76°00'
75°30'
75°00'
39°30'
39°00'
38°30'
38°00'
37°30'
37°00'
PA.
MD.
DEL.
N.J.
Baltimore
Washington D.C.
Richmond
Norfolk
DELAWARE BAY
CHESAPEAKE BAY
ATLANTIC OCEAN
POTOMAC RIVER
CHOPTANK RIVER
PATUXENT RIVER
JAMES RIVER
SCALE
NAUTICAL MILES
0 5 10 15 20 25
0 5 10 15 20 25
STATUTE MILES

Figure 2. Map of the watershed of the Rhode River subestuary of Chesapeake Bay. Subwatershed boundaries are delineated with dashed lines. Stream-gauging notch weirs, with atuomated discharge rate-recording and volume-integrated water sampling instrumentation are now operating at locations 101, 102, 103, 105, 106, 107, 108, 109, 110, and 111. Tidal flux stations with recording current meter and tide gauge interfaced with volume-integrated water samplers for incoming and for outgoing tidal waters are now operating at stations 121 and 122. The Rhode River grid is shown on the margins.


HECTARE GRID (X 1000)
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R
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101
102
103
121
122
108
124
W(107)
110
111
RHODE
RIVER
ESTUARY
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R - RAINGAUGE
W - WEATHER STATION
I - MONITORING STATION
0
1
KM
RHODE RIVER DRAINAGE BASINS

TABLE 1. LAND USE ANALYSIS OF RHODE RIVER ESTUARY WATERSHEDS UNDER STUDY.

Hectares in each land use category[1]

Basin	Row Crops	Hay Fields	Upland wet areas	Tidal marshes	Forest
101 (North Branch of Muddy Creek)	21.6 (9.6)	0.72 (0.3)	2.40 (1.1)	0.00	85.3
102 (Blue Jay Branch of Muddy Creek)	34.8 (18.1)	6.68 (3.5)	0.97 (0.5)	0.00	90.6
103 (Williamson Branch of Muddy Creek)	5.09 (2.0)	10.4 (4.1)	0.68 (0.3)	0.00	159
105 (North Branch of Sellman Creek)	4.91 (13.1)	1.52 (4.1)	0.00	0.00	11.7
106 (South Branch of Sellman Creek)	12.1 (12.7)	14.7 (15.4)	0.00	0.00	42.8
107 (Fox Creek)	2.45 (3.5)	0.00	0.19 (6.7)	0.00	16.8
108 (Steinlein Branch of Muddy Creek)	35.2 (23.5)	14.2 (9.5)	1.36 (9.1)	0.00	58.4
109 (Corn Field)[2]	10.4 (63.8)	0.00	0.00	0.00	4.26
110 (Forest)	0.00	0.00	0.00	0.00	5.71
111 (Pasture)[3]	0.00	0.00	0.00	0.00	1.65
121 (Main Branch of Muddy Creek Flux Section)*	260 (21.2)	**	59.0 (4.8)	0.00	549

TABLE 1. LAND USE ANALYSIS OF RHODE RIVER ESTUARY WATERSHEDS UNDER STUDY

	Hectares in each land use category[1]				
	Old Fields	Pasture	Feed Lots[7]	Residential and others	Total area
(37.7)	41.6 (18.4)	60.7 (26.9)	0.000	13.6 (6.0)	226
(47.2)	13.0 (6.8)	34.8 (18.1)	0.036	10.8 (5.6)	192
(62.8)	35.6 (14.1)	31.4 (12.4)	0.062	11.6 (4.6)	253
(31.2)	18.4(49.1)	0.80 (2.1)	0.000	0.16(0.4)	37.5
(44.9)	4.77(5.0)	19.6 (20.7)	0.100	1.22(1.3)	95.3
(59.6)	4.67(16.6)	2.54(9.0)	0.000	1.56(5.5)	28.2
(38.9)	20.2 (13.5)	16.2 (10.8)	0.028	4.82(3.2)	150
(26.1)	1.37(8.4)	0.00	0.000	0.26(1.6)	16.3[2]
(90.6)	0.53(8.4)	0.00	0.000	0.054(0.9)	6.3
(27.3)	0.00	4.41 (72.7)	0.000	0.00	6.06[3]
(44.7)	157 (12.8)	109 (8.8)	**	94.8 (7.7)	1229.0

TABLE 1. LAND USE ANALYSIS OF RHODE RIVER ESTUARY WATERSHEDS UNDER STUDY.

Hectares in each land use category[1]

Basin	Row Crops	Hay Fields	Upland wet areas	Tidal marshes	Forest
122 (Fox Point Flux Section)[4]	22.1 (7.4)	**	0.70 (0.2)	46.9 (15.7)	203
123 (Bearneck Creek Flux Section)[5]	21.5 (6.6)	**	(0.00)	(8.9)(2.7)	129
124 (Cadle Creek Flux Section)[6]	2.6 (2.1)	**	0.5 (0.4)	0.8 (0.7)	19.0
Total Area	422 (14.2)	48.2 (1.6)	65.8 (2.2)	56.6 (1.9)	1370

Footnotes:

1. Land use in 1976 for basins 101-111, and in 1972 for basins 121-124. The numbers in parentheses are percentages.
2. This basin is part of basin 108.
3. This basin is part of basin 101.
4. Also includes basin 101, 102, 103, 108, 110, and 26 ha of mud flats and tidal creek.
5. Also includes 60.7 ha of tidal creek open waters.
6. Also includes 19.9 ha of tidal creek of open waters.
7. Feed lot area was arbitrarily determined to be 0.001 ha per hog.

** This category was not separated from the others.

TABLE 1. LAND USE ANALYSIS OF RHODE RIVER ESTUARY WATERSHEDS UNDER STUDY

Hectares in each land use category[1]

	Old Fields	Pasture	Feed Lots[7]	Residential and others	Total area
(67.9)	15.3(5.1)	0.5 (0.2)	**	10.5 (3.5)	299.4
(39.5)	40.3(12.3)	8.4 (2.6)	**	118 (36.2)	327.5
(15.7)	15.3(12.6)	19.1 (15.8)	**	63.9 (52.8)	121.6
(46.2)	367(12.4)	303 (10.2)	0.226(0.0)	331 (11.2)	2964 (89%)

Figure 3. Map of the Rhode River subestuary of Chesapeake Bay. The names of the various arms of Rhode River are given. Channel axes are drawn in with axial distances in kilometers from the mouths upstream. Rooted, submerged aquatic plant sampling stations are designated.

Figure 3. Rhode River estuary map.

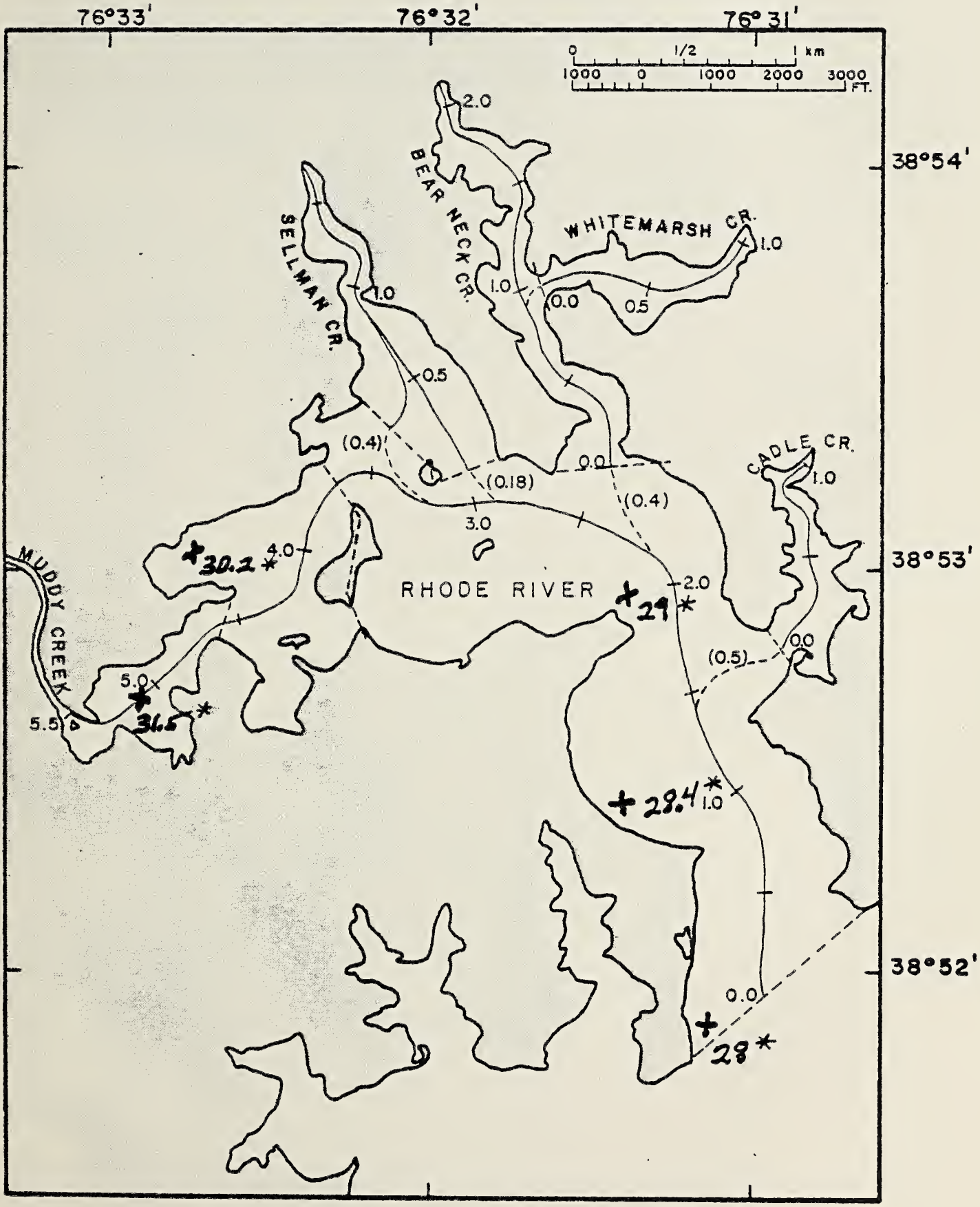

Figure 4. Map of the Rhode River subestuary of Chesapeake Bay. Transect stations are designated by a terminal T. In general, parameters were measured as vertical profiles or vertically integrated samples at point stations and as horizontally integrated samples or horizontal profiles at transect stations.

Figure 4. Map of the Rhode River subestuary of Chesapeake Bay.

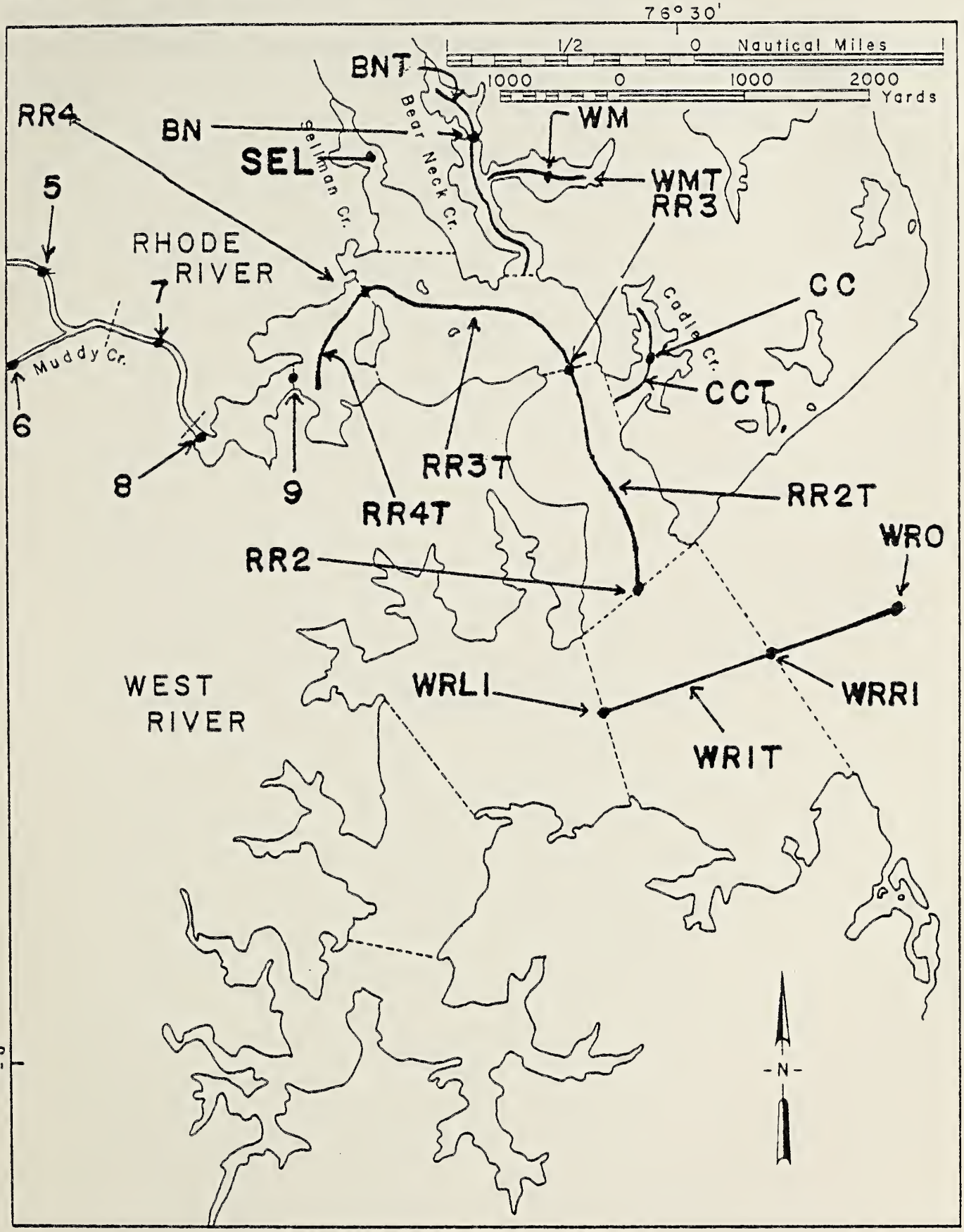

Figure 5. Patuxent River sampling stations.

PATUXENT RIVER WATERSHED

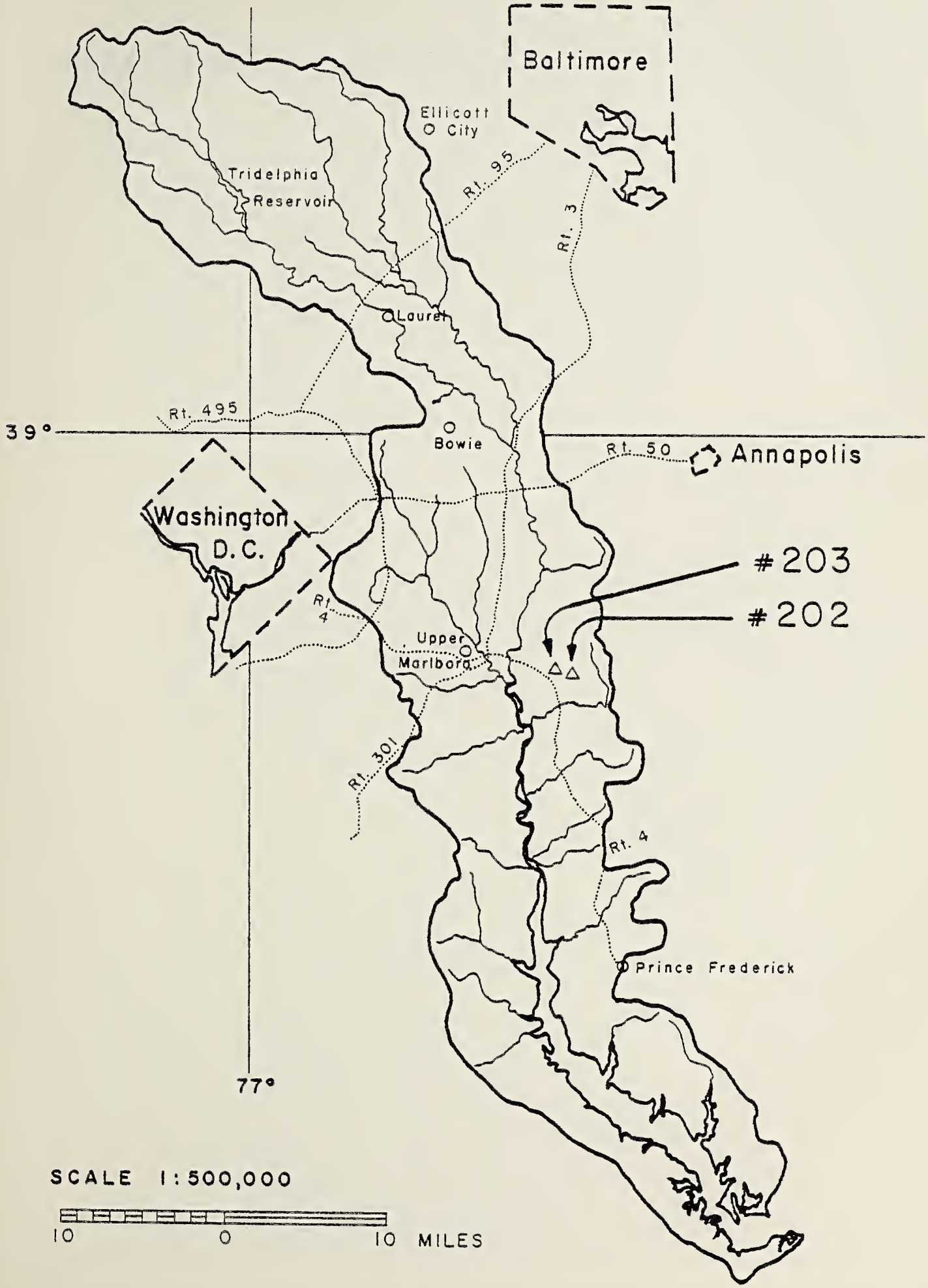

FIGURE 5

Figure 6. Choptank River sampling stations.

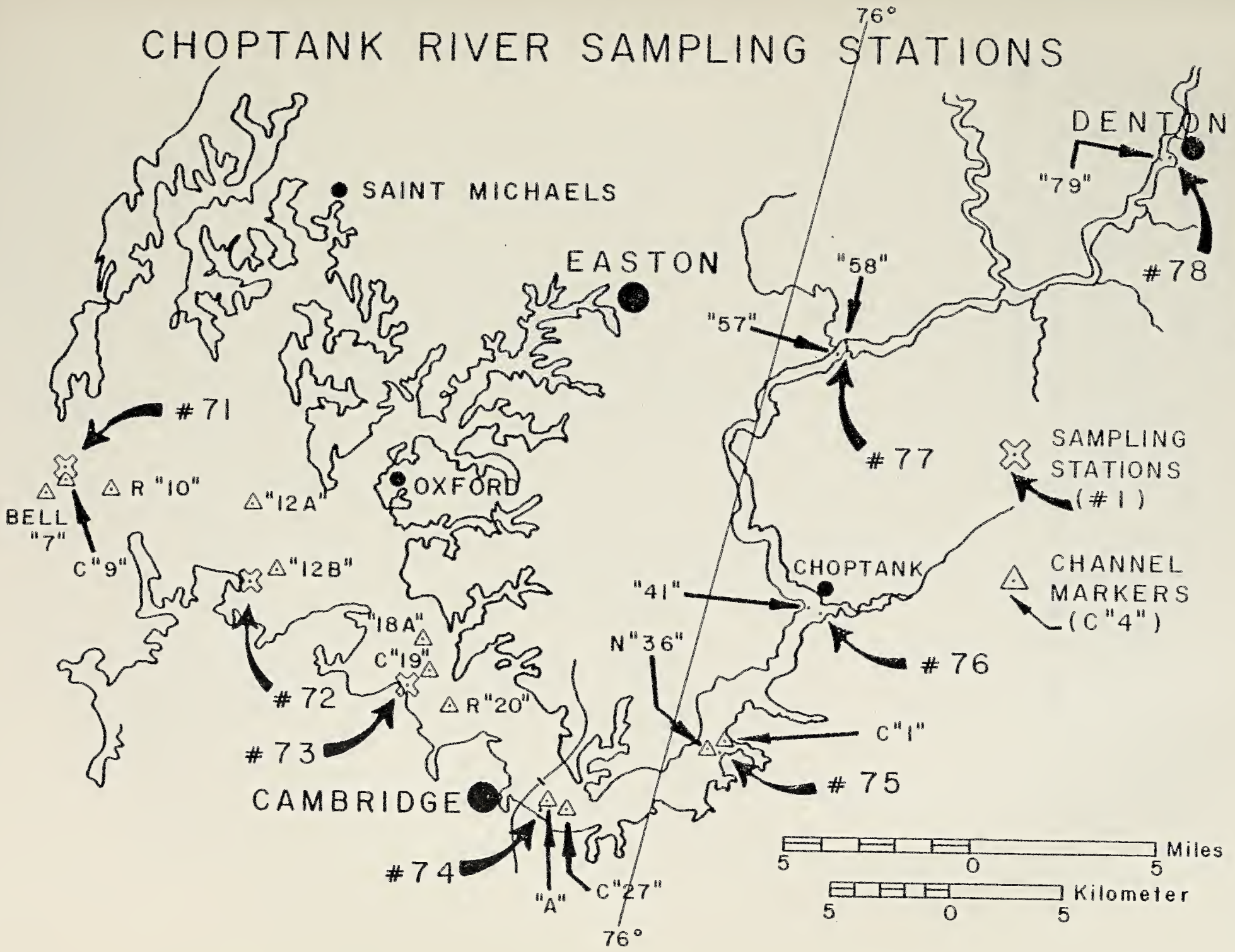

Figure 6. Choptank River map.

Figure 7. Map of the Poplar Island group with approximate boundaries at various times in the past designated. In 1976 only Coaches Island was not owned by the Smithsonian Institution. For the location of the island group in Chesapeake Bay see Figure 1. Rooted, submerged aquatic plant sampling stations are designated.

Figure 7. Poplar Island map.

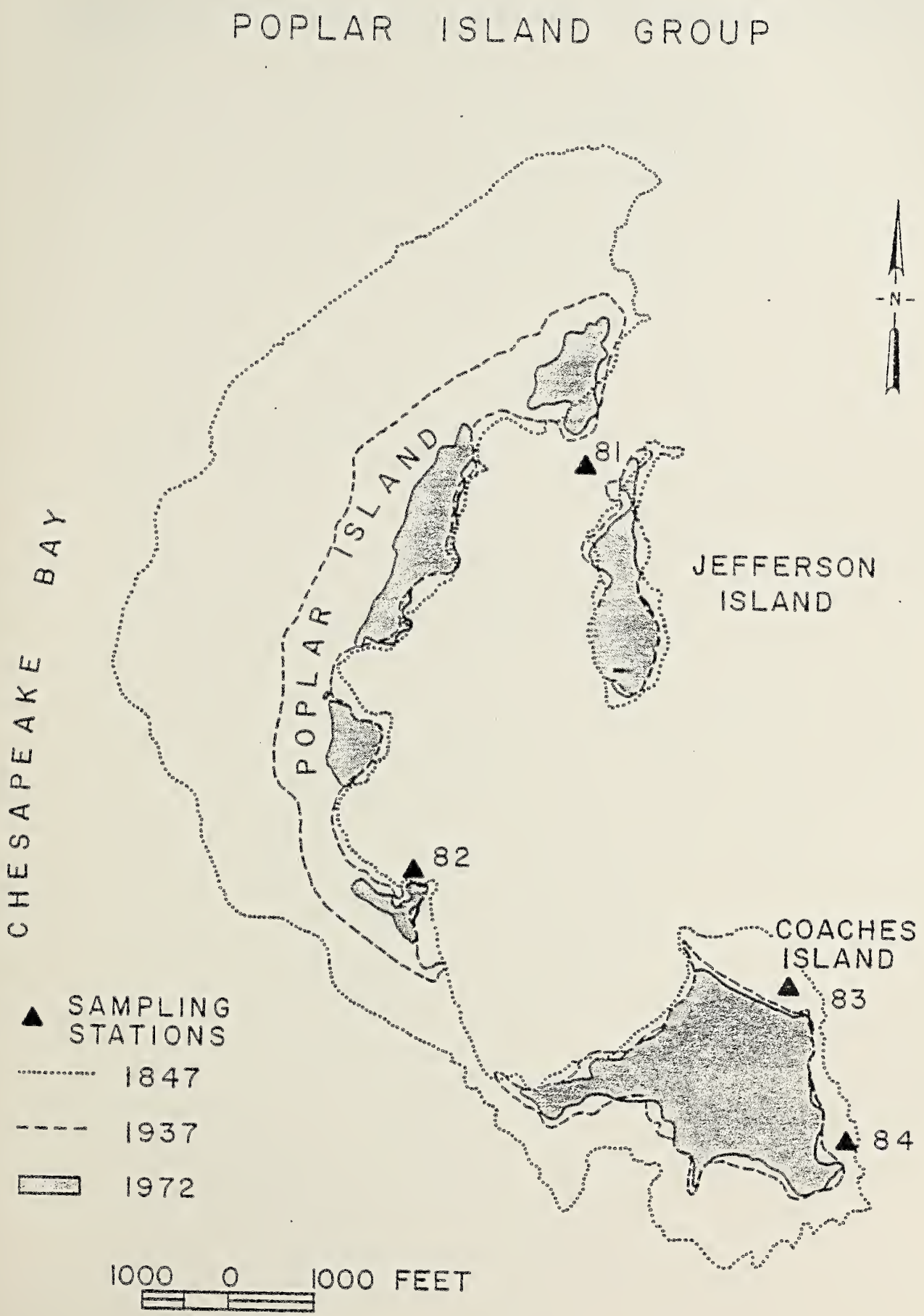

Figure 8. Watershed 109 map. This small watershed is a subwatershed of watershed 108 in Figure 2 and is also known as Intensive Study Site No. 14.

Figure 8. Watershed 109 map, a field-sized cropland (corn) watershed.

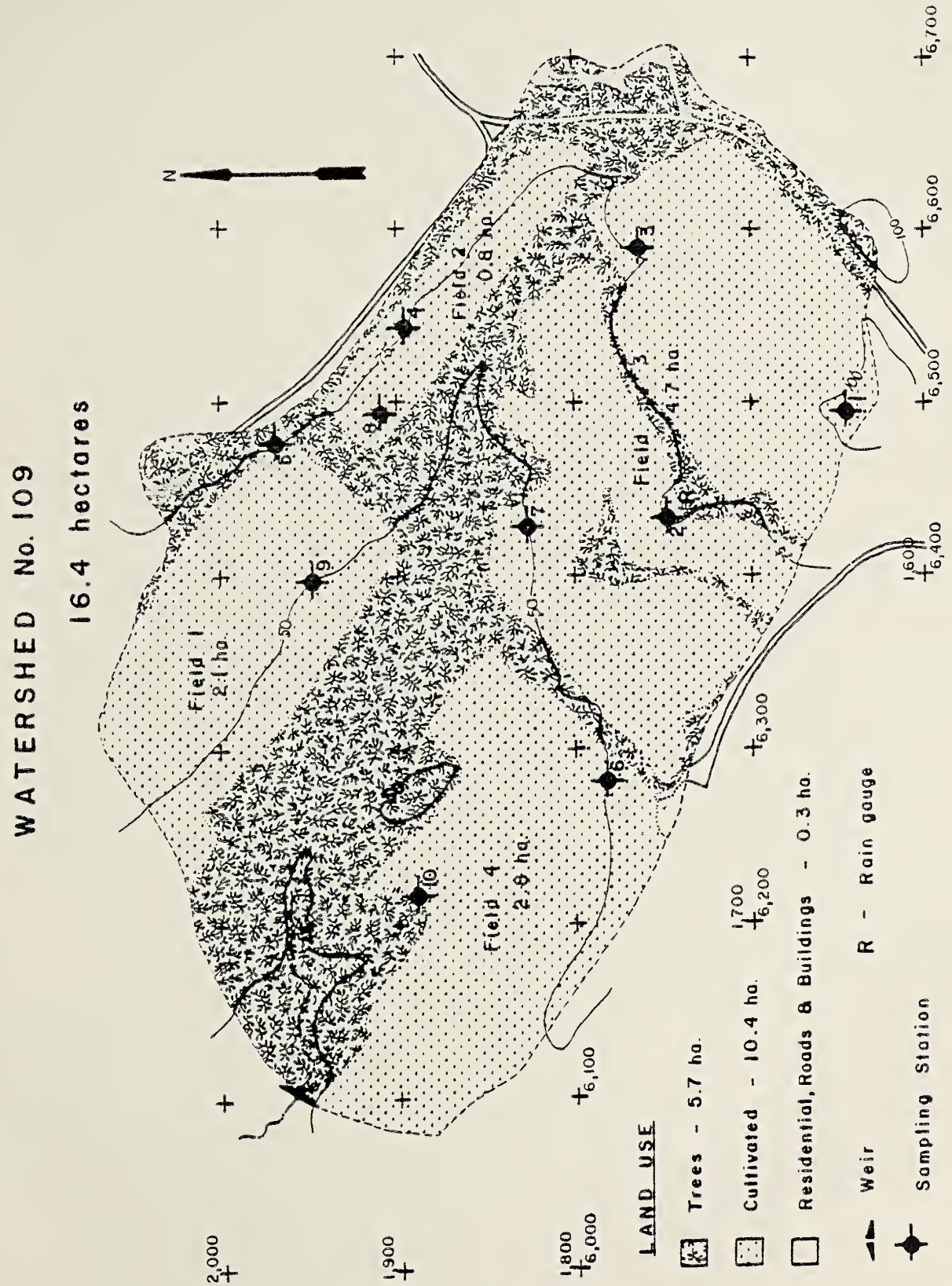

Figure 9. Watershed 110 map. This small watershed is also known as Intensive Study Site No. 2.

Figure 9. Watershed 110 map, a field-sized forest watershed.

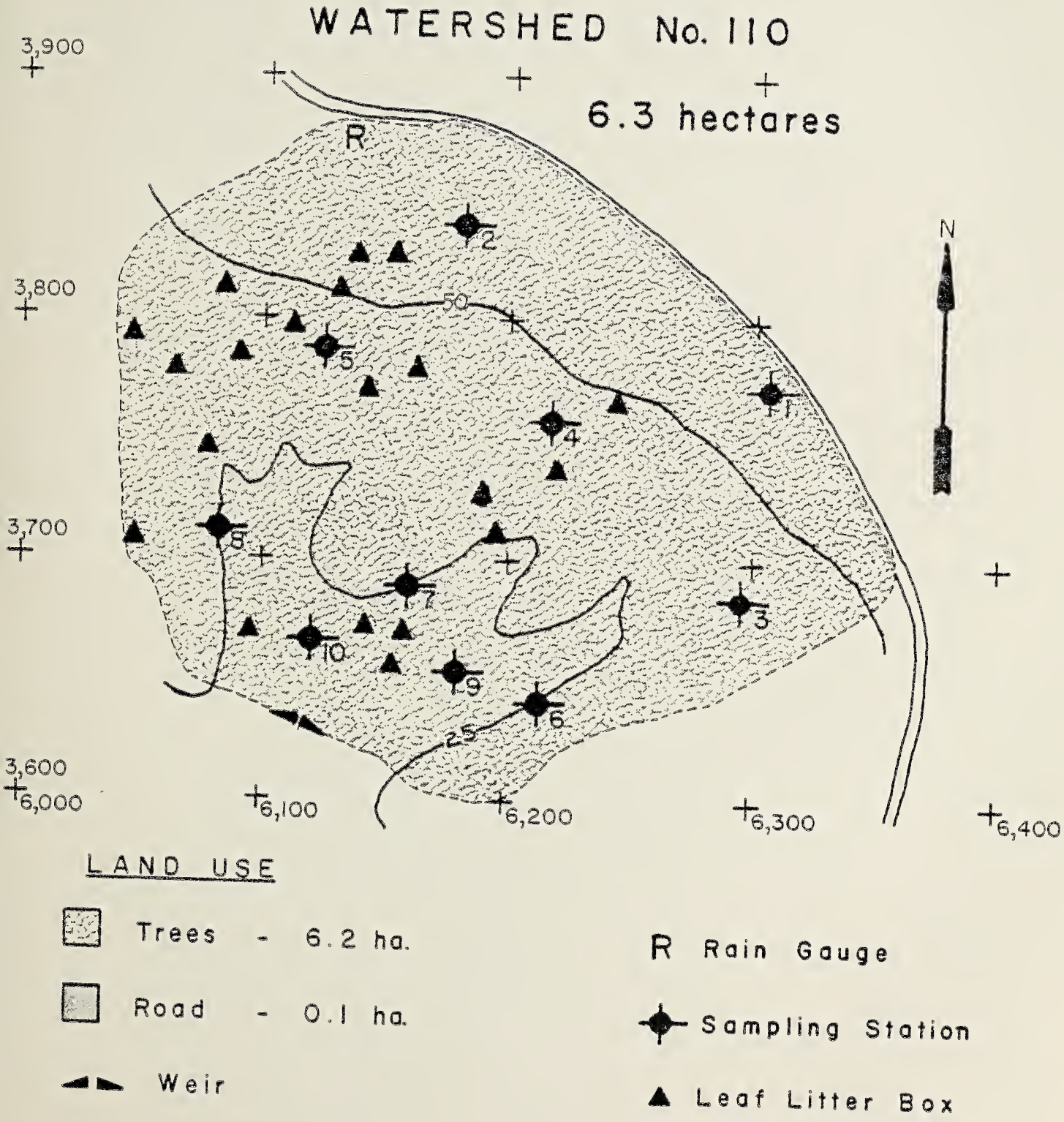

Figure 10. Watershed 111 map

Figure 10. Watershed 111 map, a field-sized pastureland watershed.

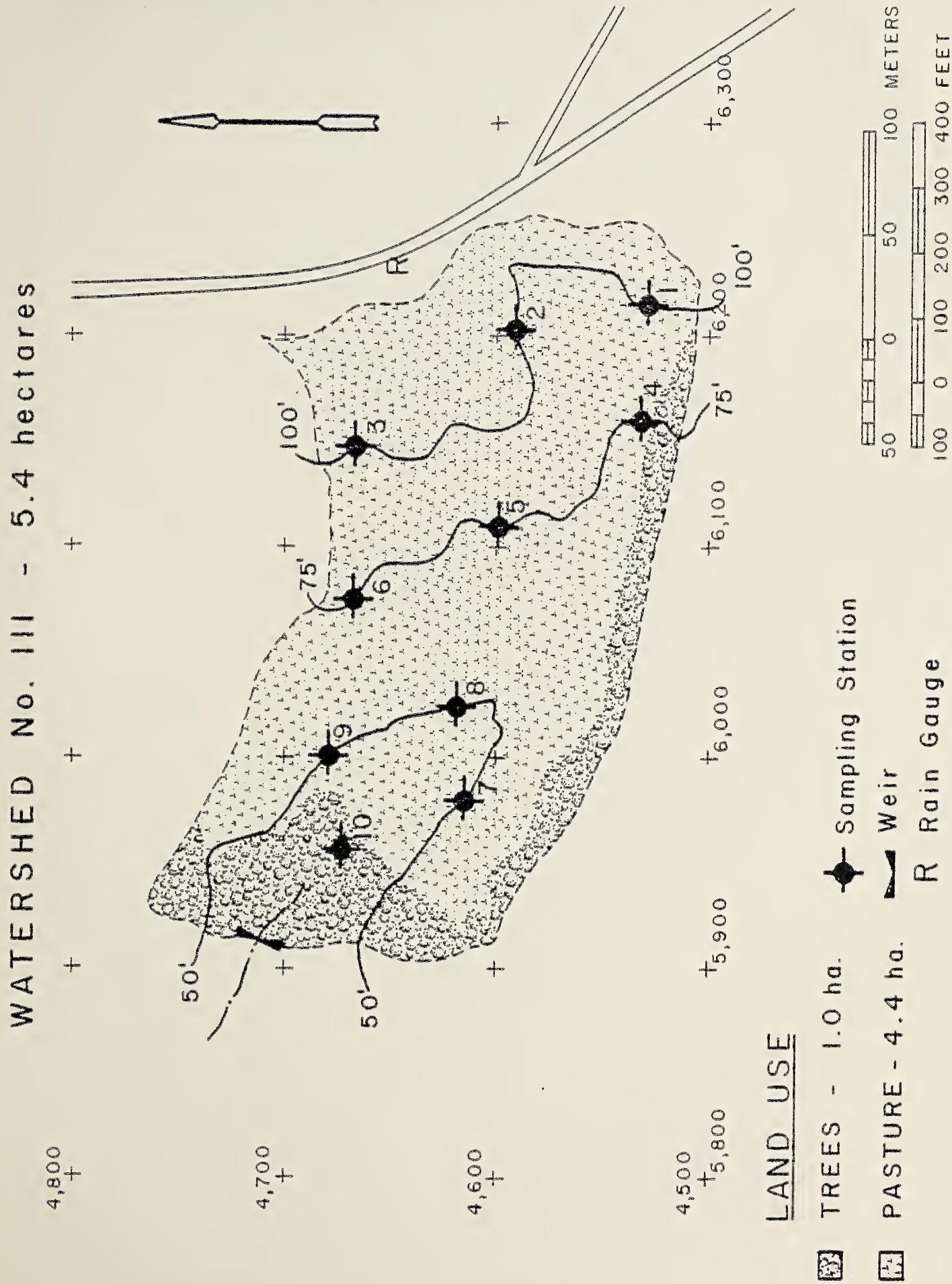

Figure 11. Rhode River watershed rain gauge location map.

Figure 11. Rain gauge locations on Rhode River watershed.

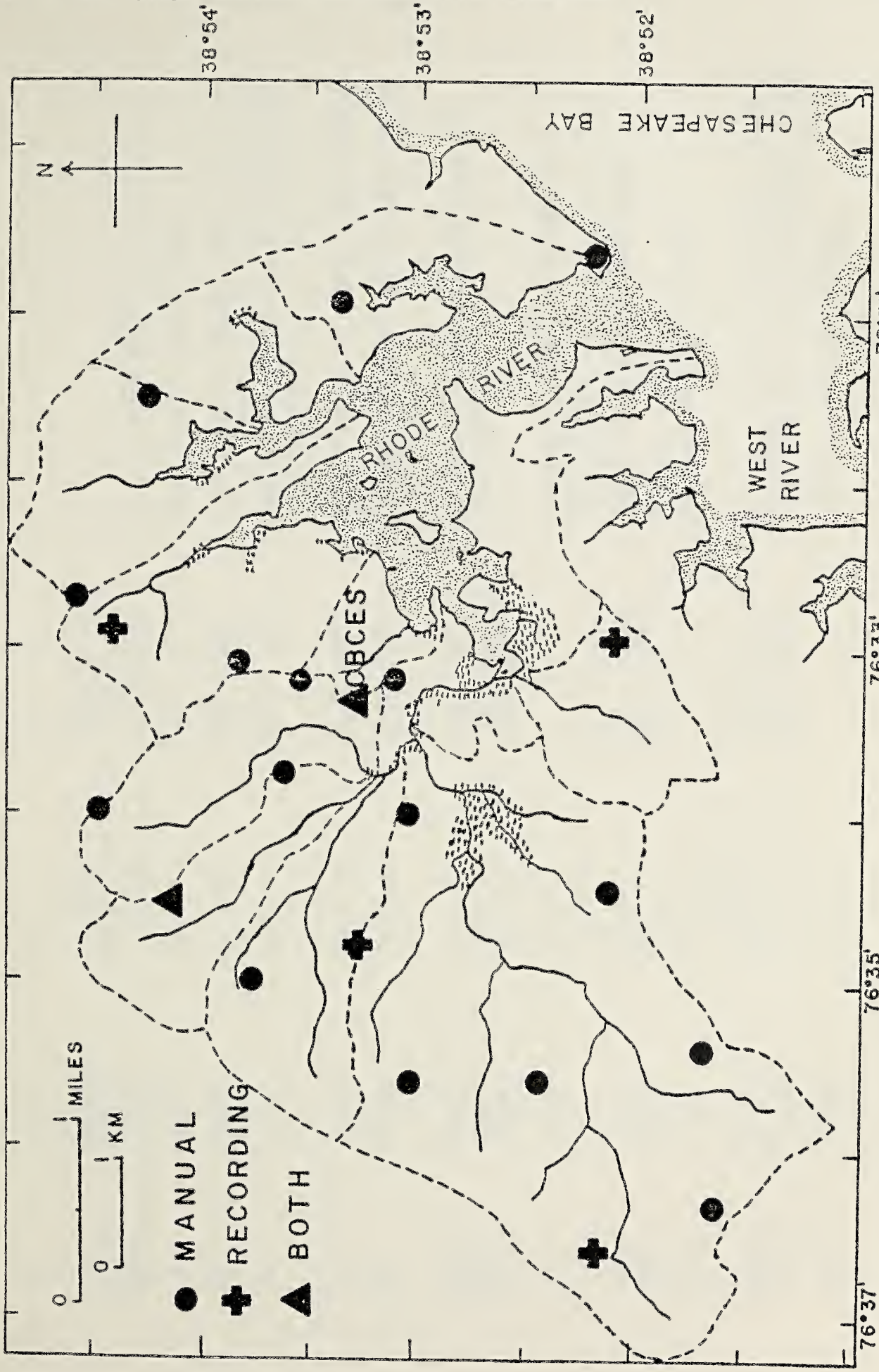

Table 2. Station Description for Estuarine Stations.

Station name	Computer station code	Axial designation (Km)	Rhode River grid location	Description
C5	00035	RR 6.8 N	5578 - 3723	North fork of Muddy Creek.
C6	00034	RR 6.95	5500 - 3506	Main branch of Muddy Creek above fork.
C7	00033	RR 6.15	6084 - 3409	Halfway between C8 and the first fork of Muddy Creek.
C8	00032	RR 5.40	6217 - 2868	Downstream end of Muddy Creek channel.
C9	00031	RR 4.50	6976 - 3313	Between Fox Point and northern end of Corn Island.
RR4C	030.4	RR 4.3	7169 - 3373	In channel west of northern end of Big Island.
RR4B	030.2	RR 4.0	7265 - 3687	
RR4A	00030	RR 3.65	7470 - 3976	
RR4T	00042	RR 3.65 - 4.3	*	Transect from RR4 to northeast of Corn Island.
RR3B	029.4	RR 3.3	7711 - 3928	Channel near RR7 channel marker.
RR3A	00029	RR 2.1	8952 - 3482	
RR3T	00041	RR 1.8 - 3.65	*	Transect from RR3 to RR4.
RR2B	028.4	RR 1.0	9193 - 2675	Center of mouth of Rhode River (line from Dutchman's Point to Cheston Point).
RR2 A	00028	RR 0.0	9518 - 1578	
RR2T	00040	RR 0.0 - 1.9	*	Transect from RR2 to RR3.

* See individual stations.

Table 2. (Continued)

Station name	Computer station code	Axial designation (Km)	Rhode River grid location	Description
WR1B	022.4	WR 0.6	9843 - 0976	In West River off Cheston Point.
WR1C	00023	WR 1.2	9193 - 0723	
WR1A	00022	RR -1.17 (WR 0.0)	10373 - 1217	Center of mouth of West River (line from Dutchman's Point to Curtis Point).
WR1T	00026	WR 0.0 1.2	*	Transect from WRR1 to WRL1.
WR0	00021	WR -1.0	11265 - 1458	WR2 channel marker.
SEL	00036	1.3	7470 - 5072	Sellman Creek.
CCA	038.8	CC 0.0	9398 - 3156	In Cadle Creek channel.
CCB	00039	CC 0.5	9590 - 3626	
CCC	039.2	CC 1.0	9494 - 4012	
CCT	00045	CC 0.0 - 1.0	*	Transect from CC Km 0 to CC Km 1.0.
BNA	036.6	BN 0.0	8651 - 4036	In Bear Neck Creek channel.
BNB	036.8	BN 0.8	8337 - 4687	
BNC	00037	BN 1.3	8265 - 5265	
BNT	00043	BN 0.0 - 1.6	*	Transect from BN Km 0 to BN Km 1.6.
WMA	037.8	WM 0.0	8385 - 4880	In Whitemarsh Creek channel.
WMB	00038	WM 0.45	8795 - 4892	
WMC	038.2	WM 0.7	8988 - 4892	
WMT	00044	WM 0.0 - 0.9	*	Transect from WM Km 0 to WM Km 0.9.

Table 2. (Continued)

Station name	Computer station code	Axial designation (Km)	Rhode River grid location	Description
	00028**	RR 0.0	9100 - 1400	Mouth of the Rhode River off Cheston Point.
	028.4**	RR 1.0	8600 - 2500	In Canning House Bay, south of channel marker RR 4.
	00029**	RR 2.1	8750 - 3400	In shallows south of channel marker RR 7.
	030.2**	RR 4.0	6700 - 3600	In shallows off Fox Cove.
	031.5**	RR 5.1	6450 - 2950	Center of sediment trap area at mouth of Muddy Creek.
RR2T	00040	NA	*	Transect
RR3T	00041	NA	*	Transect
RR4T	00042	NA	*	Transect

* See individual stations.
** These stations are not in the channel, but in the shallows.

Table 2. (Continued)

Station name	Computer station code	Axial designation (Km)	Latitude N/ Longitude W	Description
71	00071	CR 0.6	38° 39' 0" 76° 20' 0"	In shallows just north of channel marker 9.
72	00072	CR 10.2	38° 37' 42" 76° 13' 45"	In shallows on upstream shore of Todd Point.
73	00073	CR 20.8	38° 36' 12" 76° 8' 21"	In shallows on upstream shore of Horn Point.
74	00074	CR 30.8	38° 34' 6" 76° 3' 24"	On south shore at concrete bulkhead just downstream from channel marker 27.
75	00075	CR 39.6	38° 36' 33" 75° 58' 30"	On southeastern shoreline opposite Warwick Creek.
76	00076	CR 48.4	38° 40' 27" 75° 56' 42"	On eastern shoreline opposite channel marker 41 (at mouth of Hunting Creek).
77	00077	CR 67.9	38° 46' 42" 75° 57' 48"	On southeastern shore opposite channel marker 58 (on upstream side of a narrow point).
78	00078	CR 88.3	38° 52' 57" 75° 50' 24"	On the western shore opposite channel marker 79 (just downstream from Denton).
71T	0071T	NA	*	Transect
72T	0072T	NA	*	Transect

Table 2. (Continued)

Station name	Computer station code	Axial designation (Km)	Latitude N/ Longitude W	Description
73T	0073T	NA	*	Transect
74T	0074T	NA	*	Transect
75T	0075T	NA	*	Transect
76T	0076T	NA	*	Transect
77T	0077T	NA	*	Transect

* See individual stations.

Table 2. (Continued)

Station name	Computer station code	Axial designation (Km)	Latitude N/ Longitude W	Description
81	00081	NA	38° 46' 12" 76° 22' 30"	Midway between Jefferson Island and northern Poplar Island in 3-4 feet of water.
82	00082	NA	38° 45' 33" 76° 22' 42"	On inner (eastern) side of south end of Poplar Island.
83	00083	NA	38° 45' 18" 76° 21' 57"	Near dock of northeastern side of Coaches Island.
84	00084	NA	38° 45' 0" 76° 21' 45"	On eastern shore of southeastern corner of Coaches Island.
81T	0081T	NA	*	Transect
82T	0082T	NA	*	Transect
83T	0083T	NA	*	Transect

* See individual stations.

Table 3. Cross Comparison List of Watershed and Upland Stations.

Station name	Computer station code	Rhode River grid location	Description
Spring house	00099	5768 - 3793	900' northeast of junction of North and Main forks of Muddy Creek.
Weir 101 (North Branch)	00101	5732 - 4317	Three tributaries join to form the fork of Muddy Creek. This weir is on the northernmost tributary.
Weir 102 (Blue Jay Branch)	00102	5134 - 4098	Middle tributary of north fork of Muddy Creek at intersection with old Muddy Creek Road.
Weir 103 (Williamson Branch)	00103	4744 - 4268	Southernmost tributary of the north fork of Muddy Creek at the intersection with new Muddy Creek Road.
C4	00004	5049 - 3159	Main branch of Muddy Creek at intersection with new Muddy Creek Road (upstream of first large culvert south of Mill Swamp Road).
Sellman Creek North Branch Weir	00105	7061 - 5878	On northern tributary of Sellman Creek.
Sellman Creek South Branch Weir	00106	6927 - 5829	The main (and southernmost) branch of Sellman Creek.
Fox Creek Weir	00107	6610 - 3780	500' from mouth of the small stream feeding Fox Cove.
Steinlein Creek Weir	00108	5951 - 2366	1,000' upstream of the mouth of Steinlein Creek.

Table 3. (Continued)

Station name	Computer station code	Rhode River grid location	Description
Corn field Watershed Weir	00109	6098 - 1988	Near the lower end of field-sized watershed composed of four corn fields. A branch of Steinlein Creek.
Forest Area Weir	00110	6025 - 3615	Field-sized watershed composed of only forest. Drains directly into Muddy Creek estuary. Northern portion of intensive study site number 2.
Pasture Watershed Weir	00111	6040 - 4723	Field-sized watershed composed only of pasture. A subwatershed of the north branch of Muddy Creek.
Main Branch of Muddy Creek Flux Section	00121	5195 - 3207	On the main (southern) fork of Muddy Creek just downstream of the last tributary about 600' downstream from Muddy Creek Road.
Fox Point Flux Section	00122	6927 - 3317	Mouth of the sediment trap of Muddy Creek between Fox Point and northern end of Corn Island.
Bear Neck Creek Flux Section	00123	8671 - 4293	Mouth of Bear Neck Creek.
Cadle Creek Flux Section	00124	9439 - 3171	Mouth of Cadle Creek.

Table 3. (Continued)

Station name	Computer station code	Rhode River grid location	Description
Patuxent River weir	00202	NA	East fork of Cabin Branch of Lyons Creek. 515.5 ha basin near Bristol, Maryland.
Patuxent River weir	00203	NA	West fork of Cabin Branch of Lyons Creek 212.3 ha basin near Bristol, Maryland.

Table 3. (Continued)

Present station name	Pre 1975 station name	Computer station code	Rhode River grid location	Description
Intensive study site 1	Forest ecology site #1	00001	6200 - 3000	Hog Island. Mature forest with only minimal disturbance historically (selective logging).
Intensive study site 2	Forest ecology site #2	00002	6100 - 3500	North branch of tidal Muddy Creek. Mature forest with only minimal disturbance historically.
Intensive study site 3	Forest ecology site #3	00003	6800 - 3800	Undisturbed for approximately 130 years, previously site of slave quarters and presettlement Indian village.
Intensive study site 4	Forest ecology site #4	00004	5200 - 4300	Mature forest prior to approximately 1830 - 1840, was intensively cultivated for many years.
Intensive study site 5	Forest ecology site #5	00005	6400 - 3400	Young forest on lands used for cultivated crops prior to about 1940 - 1945.
Intensive study site 6	Forest ecology site #6	00006	6600 - 4000	Young forest on lands used for cultivated crops prior to about 1940 - 1945.
Intensive study site 7	Forest ecology site #7	00007	5900 - 4000	Young forest on lands used for mule pasture prior to about 1940.

Table 3. (Continued)

Present station name	Pre 1975 station name	Computer station code	Rhode River grid location	Description
Intensive study site 8	Forest ecology site #8	00008	5900 - 4400	Phalaris grass meadow used for pasture prior to about 1940.
Intensive study site 9	Steven's farm field	00009	6800 - 6300	Old field, abandoned on or about 1972.
Intensive study site 10	CBCES lawns	00010	6050 - 4150	Lawns located around buildings, in duck yard, and along entrance road.
Intensive study site 11	Steinlein's farm field	00011	5800 - 2500	Old field, abandoned on or about 1968.
Intensive study site 12	Fox Point forest	00012	6900 - 3450	Mature forest on outer end of Fox Point. A residence was located there until recent times.
Intensive study site 14	NA	00014	6400 - 1900	Field-sized watershed composed of four corn fields. A subwatershed of the Steinlein Creek basin.
Intensive study site 15	Kirkpatrick-howat's pasture	00015	6100 - 4700	Field-sized watershed composed only of cow pasture. A subwatershed of the North Branch of Muddy Creek basin.
Intensive study site 16	Fox Cove marsh	00016	6500 - 3500	High marsh between Fox Point and dock.
Intensive study site 17	Hog Island marsh	00017	6200 - 3200	High marsh between Hog Island and Fox Point.

Table 3. (Continued)

Present station name	Pre 1975 station name	Computer station code	Rhode River grid location	Description
Intensive study site 18	Nixon's Nose	00018	7300 - 3100	High marsh on point east of Corn Island.
Intensive study site 19	Track site	00019	6100 - 2800	Low marsh on south shore near channel at mouth of Muddy Creek.
Intensive study site 20.	Kirkpatrick marsh	00020	6800 - 2800	High marsh southwest of Corn Island.
Intensive study site 21	North Branch swamp	00021	5700 - 4200	Freshwater swamp on North Branch of Muddy Creek just upstream of old entrance road.
Intensive study site 22	NA	00022	5900 - 2200	Freshwater swamp on Steinlein Creek upstream of weir.
Intensive study site 23	NA	00023	5900 - 4200	Pine forest on water tower hill west of Center.
Intensive study site 24	NA	00024	6400 - 3600	Pine forest east of Fox Point road.
Intensive study site 25	Kirkpatrick-Howat's cornfield	00025	6900 - 4200	Cornfield between dock road and Contee's Wharf Road.

Table 4. Principal Investigator Code List

Investigator	Affiliation	Code
Ms. Vera Aberkrischik	Department of Zoology University of Maryland College Park, Maryland 20742	033
Mr. Keith A. Berven	Department of Zoology University of Maryland College Park, Maryland 20742	034
Dr. Rita Colwell	Department of Microbiology University of Maryland College Park, Maryland 20742	001
Mr. Gary R. Chirlin	Chesapeake Bay Center for Environmental Studies*	027
Dr. David L. Correll	Chesapeake Bay Center for Environmental Studies*	002
Mr. Robert Cory	Oceanographer U.S. Geological Survey Chesapeake Bay Center for Environmental Studies*	003
Dr. Bert G. Drake	Radiation Biology Laboratory Smithsonian Institution 12441 Parklawn Drive Rockville, Maryland 20852	004
Mr. Douglas A. Gill	Department of Zoology University of Maryland College Park, Maryland 20742	035
Dr. John H. Falk	Chesapeake Bay Center for Environmental Studies*	005
Dr. Maria A. Faust	Chesapeake Bay Center for Environmental Studies*	006
Dr. W. Ronald Heyer	Department of Vertebrate Zoology Museum of Natural History Smithsonian Institution Washington, D.C. 20560	007
Ms. Amy Hiatt	Chesapeake Bay Center for Environmental Studies*	030

Table 4. (Continued)

Investigator	Affiliation	Code
Mr. Daniel Higman	Chesapeake Bay Center for Environmental Studies*	008
Dr. James F. Lynch	Chesapeake Bay Center for Environmental Studies*	009
Mr. Albert D. Maizels	Suite 304, Columbia Medical Bldg. 1835 Eye Street, N.W. Washington, D.C. 20006	011
Mr. Joe Miklas	Chesapeake Bay Center for Environmental Studies*	036
Dr. Eugene S. Morton	National Zoological Park Smithsonian Institution Washington, D.C. 20009	029
Dr. Paul A. Opler	Office of Endangered Species U.S. Fish & Wildlife Service Department of Interior Washington, D.C. 20240	037
Dr. Jack W. Pierce	Sedimentology Department Museum of Natural History Smithsonian Institution Washington, D.C. 20560	013
Dr. Edward J. Pluhowski	U.S. Geological Survey Northeastern Region National Center, Mail Stop #413 Reston, Virginia 22092	014
Mr. Jan Reese	Box 298 St. Michaels, Maryland 21663	015
Dr. Howard H. Seliger	Department of Biology Johns Hopkins University 34th and North Charles Street Baltimore, Maryland 21218	018
Dr. William J. L. Sladen	School of Hygiene and Public Health Johns Hopkins University 615 N. Wolfe Street Baltimore, Maryland 21205	019
Dr. Beryl Simpson	Department of Botany Museum of Natural History Washington, D.C. 20560	038

Table 4. (Continued)

Investigator	Affiliation	Code
Dr. J. Kevin Sullivan	Chesapeake Bay Center for Environmental Studies*	021
Dr. Dennis Whigham	Chesapeake Bay Center for Environmental Studies*	032
Dr. Tung-Lin Wu	Chesapeake Bay Center for Environmental Studies*	026

* Chesapeake Bay Center for Environmental Studies
Smithsonian Institution
P. O. Box 28
Edgewater, Maryland 21037

Table 5. Research Funding Codes

Source	Code
Chesapeake Bay Center direct federal funding	001
Smithsonian Institution Environmental Sciences Program	002
Smithsonian Research Foundation	003
Smithsonian Fluid Research Fund	004
National Science Foundation	005
Environmental Protection Agency	006
Maryland Power Plant Siting Program	007
Chesapeake Bay Work/Learn Program	008

Table 6. Analytical Techniques Code List

Parameter and Units	Technique	Code
Flow rate (liters/sec.)	Monitor depth in stilling well of water backed up by sharp-crested V-notch weir (Correll, Pierce and Faust, 1975).	031
Flow rate (liters/sec.)	Monitor tidal current velocity with electromagnetic current meters. Correct for cross-sectional areas with tide gauge-operated cam and potentiometer.	032
Total flow (liters)	Flow rate integrated over time.	033
Water temperature (degrees C)	Mercury thermometer	034
Water temperature (degrees C)	Thermistor	035
pH	Indicator dyes and color comparator.	036
pH	Hydrogen electrode	037
Turbidity (Jackson units)	Scattering of columnated white light with Hach turbidimeter.	038
Turbidity (meters)	Secci disc	039
Turbidity (% transmission)	Transmission of white light. Photo-synthetically active intensity on the deck and underwater at various depths is measured with a Lambda, model Li 185, photometer and quantum sensor.	040
Turbidity (% transmission)	Transmission of green light	041
Light penetration (absorbance)	Measurement of vertical absorbance of incident sunlight in water column.	042
Total and mineral suspended particulates (mg/liter)	Gravimetric on millipore Ha filters before and after firing organics (Correll, Pierce and Faust, 1975).	043

Table 6. (Continued)

Parameter and Units	Technique	Code
Total N (µg N/liter)	Sum of organic plus ammonia N (by Kjeldahl) and nitrate plus nitrite N by reduction to nitrite and colorimetry (Correll, Pierce and Faust, 1975).	044
Organic N (including NH_3 (µg N/liter)	Kjeldahl distillation and nesslerization after digestion with H_2SO_4.	045
Ammonia N (µg N/liter)	Oxidation to nitrite and colorimetry.	046
Nitrite + Nitrate N (µg N/liter)	Reduction to nitrite and colorimetry.	047
Nitrite N (µg N/liter)	Colorimetry (by reaction with a diazo dye).	048
Total P (µg P/liter)	Digestion with perchloric acid and colorimetry (ammonium molybdate and stannous chloride reduction.	049
Dissolved total P (µg P/liter)	Total P on millipore HA filtrate.	050
Inorganic P (µg P/liter)	Colorimetry on whole water with no digestion.	
Dissolved inorganic P (µg P/liter)	Colorimetry on millipore HA filtrate with no digestion.	
Total organic matter (g cal./liter)	Wet digestion with chromic acid and titration.	051
Cations (Ni, Cu, Zn, Pb, Cr, Cd, Mn, Fe, K, Ca, Mg, Na)	500 ml sample plus 5 ml concentrate. HNO_3 concentrated to 10 ml by boiling. Assayed by atomic absorption with internal standards.	052
Total and fecal coliform bacteria (MPN/100 ml)	As described in Standard Methods (1971).	053

Table 6. (Continued)

Parameter and Units	Technique	Code
Total and fecal streptococci (#/100 ml)	As described in Standard Methods (1971) and by Millipore Corp. membrane filter technique.	054
Salmonella (#/100 ml)	As described in Standard Methods (1971) and confirmation including serotyping.	055
Total viable heterotrophs (#/ml)	Standard plate counts.	056
Salinity and conductivity (0/00 mmhos)	Normally determined with an induction type salinometer. Sometimes by titration of halogen ions.	057
Organic carbon (mg C/liter)	Combustion at 550^{0} for 10' purification and weighing of released CO_2.	058
Dissolved oxygen (mg/liter)	Clark-type oxygen electrode or by modified Winkler titration.	059
Chlorophyll a (µg/liter)	Fluorometric assay of 90% acetone extracts by three filter methods before and after acidification (Loftus and Carpenter, 1971).	060
Adult and nauplii copepods, rotifers, polychaetes, other macrozooplankton, tintinnids, other microzooplankton	Identified and counted under the microscope with aid of a Sedwick-rafter cell. Fixed in field with Bouin's fixative.	061
Leaf litter parameters	Collected in 1 m^2 boxes, sorted to species, dried 24 hours at 60^{0} and weighed.	062

Table 6. (Continued)

Parameter and Units	Technique	Code
Small mammal populations	Animals are trapped with a grid of 100 Sherman live traps at each site, left permanently in place. Mammals are trapped for three nights per month at each site. Animals are identified, permanently marked for future recognititon, weighed, sexed, and their reproductive condition noted. Minimal population densities are estimated from the ratio of trapped animals which previously have been captured and marked: number of unmarked animals.	063
Ant populations	Sweep sampling, litter sampling, baiting, soil coring and general collecting of ants; observation of behavior; monitoring of temperature and humidity in air and soil; mapping of colony location, cover objects, vegetation. Study sites to be marked with painted sections of conduits and small plastic surveyor's flags. Humidity sensors and thermistor probes to be implanted in soil on a long-term basis; possibility of multiplex data recorder to be operated at one or more sites on a long-term basis.	064
Understory arthropods	Monthly sweep samples of understory arthropods; arthropods later sorted to species, measured, and assigned to trophic grouping. Foliage density measured seasonally.	065
Leaf litter arthropods	Sampling. Leaf litter is removed from within a 1/10 sq. meter sampling frame from each of 10 subsite sampling stations at each site (total of 1 sq. meter of leaf litter per site per month). The litter is collected in plastic bags. The subsite sampling stations for each of the three major sites are determined from a computer generated table of random numbers.	066

Table 6. (Continued)

Parameters and Units	Technique	Code
Leaf litter arthropods (continued)	The organisms are extracted from the leaf litter into alcohol through the use of Berlese funnels. Leaf litter from each subsample site is placed into one funnel (a total of 10 funnels for each of the three sites). Incandescent light bulbs (40 - 60 watts) are used for drying the leaf litter. The alcohol jars containing the arthropods are removed from the funnels at the end of a three week period. The arthropods are sorted and studied under a stereo dissecting microscope. This part of the project is done at Anne Arundel Community College.	066
Turf project	A combination of lawn clipping collection, sweep sampling, soil coring, and vacuum sampling are used. Invertebrates are sorted by species.	067
Soil temperature and moisture	At each soil sampling station moisture and temperature probes were buried at depths of 5, 15, 30, and 75 cm with electrical leads connected to sockets in a junction box aboveground for manual readings. Delmhorst gypsum block moisture sensors and a Delmhorst Model KS-1, moisture testor are used. The ranges of the testor have been modified to allow zeroing against 0, 100, or 10,000 ohms resistance. In situ calibration curves for each probe were constructed by gravimetric moisture determinations from soil cores at the appropriate depths under various moisture conditions. Calibration curves of probe responses, undisturbed soil moisture retention and disturbed soil moisture retention were also run in a pressure bomb system. Temperature was measured with Renwal precision uni-curve thermistors, coated with epoxy	069

Table 6. (Continued)

Parameters and Units	Technique	Code
Soil temperature and moisture (continued)	cement and resistance was read with a battery powered Fluke digital multimeter. During intensive study periods reading of probes are made daily. At other times they are read approximately weekly.	069
Soil pH	pH was measured with a hydrogen electrode system after suspension of an aliquot of soil core in one ml of distilled water per g of soil and centrifugation.	070
Phosphorus, available orthophosphate, total orthophosphate acid labile, and total phosphorus in soils	Total phosphorus, acid labile, and orthophosphate were determined as described by Correl and Miklas (1975). Total phosphorus was determined on whole soil only. Orthophosphate was determined on whole soil, a 1 M K Cl extract, and on a distilled water extract. The extraction procedure is to extract one g of soil with 15 ml distilled water, then with 10 ml distilled water, removing soil from extraction liquid by centrifugation. The extracted soil is then reextracted in the same manner but with 1 M K Cl.	071
Total ammonia and nitrate in soils, exchangeable ammonia and nitrate in soils, and organic nitrogen	Total Kjeldahl nitrogen is determined by digestion with sulfuric acid and hydrogen peroxide, distillation and Nesslerization (Martin, 1972). Total ammonia is determined by Kjeldahl distillation from undigested but alkaline samples plus Nesslerization. Water soluble ammonia is determined as above but on distilled water extracts of soil.	072

Table 6. (Continued)

Parameters and Units	Technique	Code
Total ammonia and nitrate in soils, exchangeable ammonia and nitrate in soils, and organic nitrogen	Exchangeable ammonia is determined on 1 M K Cl extracts of previously water extracted soils. Nitrate is determined by the modified Conway microdiffusion method (Stanford, et al (1973)).	072
Corn and weed populations, soil coverage, and plant nutrient withdrawal	Corn plant heights and total plant soil coverage are measured in the cornfield watershed at approximately 10 day intervals during the growth season. Heights were measured at five stations on randomly selected plants. Soil coverage was measured by taking vertical color pictures from an elevation of 6 meters. Percent leaf coverage was estimated by projecting the color slides onto a grid with randomly selected intercepts premarked. The percentage of intercepts which fell on plants was then used to calculate soil coverage (point-intercept method). At approximatley 20 day intervals during the growing season and at harvest time corn plants were excavated at five stations. They were separated into roots, stems, leaves, flowers, corn kernels, and corn cobs for dry weight determinations, total Kjeldahl nitrogen content, and total phosphorus determinations. Nutrient assays were done by the same techniques as for soils. In September aboveground weed biomass was measured as numbers and dry weight by species in three 25 m^2 plots at each of the ten stations. Three random 0.5 x 0.5 m subplots were sampled.	073

Table 6. (Continued)

Parameters and Units	Technique	Code
Tree coring and populations	Populations of seedlings, saplings, and mature tree species were surveyed by laying out quadrats, identifying and tagging individuals, measuring their heights, diameters, and ages (by morphology or by coring).	074
Bottom sediment sampling	At each station three Pflueger cores were taken unless the bottom was too hard in which case three Ekman Dredge samples were taken. These samples were analyzed for percent organics, mineralogy, and mineral particle size distribution. In the case of cores these parameters were measured as vertical profiles.	075
Submerged plant populations	A common steel garden rake is used to collect plants by scrapping the surface of the bottom sediments in random paths in areas of 0.6 to 1.2 meters depth. Sampling stations are selected in areas of shallows relatively protected from wave action. A total area of bottom of from 10 to 100 square meters per station is sampled, depending upon plant abundance. Samples of plants from each station are sorted by species, counted, dried to constant weight at 60^{o} C in an oven and weighed. On site visual observations are also recorded of presence or absence of plants.	076

Table 6. (Continued)

Parameters and Units	Technique	Code
Herbicides in soils, streams, bay waters, and sediment	At each station 15 ℓ of surface waters are taken and 50 g Ca Cl_2 are added. The sample is allowed to stand overnight and is then filtered through a Gilman, type A, glass fiber filter. The filter is then treated with anhydrous sodium sulfate and extracted with toluene and methylene dichloride. The filtrate is extracted with toluene and then with methylene dichloride. Sediment cores (3) were taken at each station with a Pflueger corer. In cases of hard bottom conditions, a set of three Ekman dredge samples were taken. These sediment samples were stored on ice until they could be segmented (cores). Subsamples of 10 g weight were then mixed with 10 g anhydrous sodium sulfate and extracted with toluene and methylene dichloride.	077
Mineralogy and sand/silt/clay fractionation	Soils are fractionated into sand, silt, and clay by screening and hydrodynamic methods and each fraction is weighed. The amount of organics is determined by firing. Mineralogy is determined on silt and clay fractions by X-ray diffraction. Preparation is described by Carroll (1970). Soils are analyzed for free-iron oxides and allophane (Jackson, 1956).	078
In vivo chlorophyll a concentrations	Between stations the boat was operated at an even speed and surface waters were pumped continuously from a depth of 0.5 m through a flow-thru door (110-880A) on a Turner model 111 flurometer. The flurometer had a F4T4-B1 blue excitation lamp, a Corning 5-60 excitation filter, a Corning 2-64 emission filter and a red sensitive	079

Table 6. (Continued)

Parameters and Units	Technique	Code
In vivo chlorophyll a	photomultiplier tube (R-136). The signal was recorded on a strip chart. A sample of known volume was taken at a marked time position on the chart, filtered through a Millipore HA filter, and the filter was dissolved in 90% acetone saturated with $MgCO_3$ and stored in the dark. The acetone extract was then analyzed for chlorophyll a by the method of Loftus and Carpenter (1971). The average in vivo fluorometer response was then determined by integration of the transect recording and the concentration of chlorophyll a was determined by multiplying times the µg in vitro chlorophyll a per in vivo response unit.	079
Plankton primary production and phosphorus uptake by double label technique	Inorganic carbon and orthophosphate uptake are determined by simultaneous exposure to C-14 labeled HCO_3 and P-32 labeled PO_4 in light and dark bottles, incubated in a running water estuarine incubator exposed to sunlight. Time course of uptake for one hour is measured.	080
Spawning fish populations	During the entire spawning period a Fyke net was maintained at station 00032. Adult perch were weighed, tagged, and scale samples were taken for age-growth studies. D type fish traps were also used for recapture studies at stations 00033-00035.	081
Egg hatching and larval studies	Egg masses are counted in the spawning areas. Selected egg masses are divided into two parts and one is incubated in situ while the other is incubated in the laboratory. Larvae are sampled by towing a plankton net along transects between stations from 00031 to 00035.	082

Table 6. (Continued)

Parameters and Units	Technique	Code
An insular deer population and its food supply	Direct counts in fall and spring by means of a deer drive. Twenty to 30 observers utilized to census islands of 4 - 20 hectares. Further estimates of deer numbers obtained by periodic counts of pellet groups on 80 10 m^2 quadrats. Impact of deer on vegetation assessed by repeatedly censusing vegetation in three 30 m x 30 m fenced enclosure plots vs. three adjacent control plots to which deer have access.	083
Photosynthetic and respiration rates of submerged vascular plants	Plants are incubated in millipore HA filtered local water in BOD bottles (light and dark) with oxygen electrodes. Plants are washed first. Incubation is carried out at various depths.	084

References for Technique Codes

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Table 7. Parameters Measured in Estuarine Work.

Salinity (ppt)

Category: 210

Format: XX.XX

Sample type: GRB

Technique code: 057

Investigator code: 002

Funding code: 006

File ID: 4RI

Computer station code	Station name	Time span	Time frequency
00028	28	Apr. - Oct.	Once a month
028.4	28.4	"	"
00029	29	"	"
030.2	30.2	"	"
031.5	31.5	"	"
00071	71	"	Once a season
00072	72	"	"
00073	73	"	"
00074	74	"	"
00075	75	"	"
00076	76	"	"
00077	77	"	"
00078	78	"	"

Table 7. (Continued)

Salinity (ppt)

Computer station code	Station name	Time span	Time frequency
00081	81	Apr. - Oct.	Once a season
00082	82	"	"
00083	83	"	"
00084	84	"	"

Table 7. (Continued)

Conductivity (mmhos)

Category: 211

Format: XX.XX

Sample type: GRB

Technique code: 057

Investigator code: 002

Funding code: 006

File ID: 4RI

Computer station code	Station name	Time span	Time frequency
00028	28	Apr. - Oct.	Once a month
028.4	28.4	"	"
00029	29	"	"
030.2	30.2	"	"
031.5	31.5	"	"
00071	71	"	Once a season
00072	72	"	"
00073	73	"	"
00074	74	"	"
00075	75	"	"
00076	76	"	"
00077	77	"	"
00078	78	"	"

Table 7. (Continued)

Conductivity (mmhos)

Computer station code	Station name	Time span	Time frequency
00081	81	Apr. - Oct.	Once a season
00082	82	"	"
00083	83	"	"
00084	84	"	"

Table 7. (Continued)

Temperature (^{o} C)

Category: 212

Format: XX.XX

Sample type: GRB

Technique code: 035

Investigator code: 002

Funding code: 006

File ID: 4RI

Computer station code	Station name	Time span	Time frequency
00028	28	Apr. - Oct.	Once a month
028.4	28.4	"	"
00029	29	"	"
030.2	30.2	"	"
031.5	31.5	"	"
00071	71	"	Once a season
00072	72	"	"
00073	73	"	"
00074	74	"	"
00075	75	"	"
00076	76	"	"
00077	77	"	"
00078	78	"	"

Table 7. (Continued)

Temperature (° C)

Computer station code	Station name	Time span	Time frequency
00081	81	Apr. - Oct.	Once a season
00082	82	"	"
00083	83	"	"
00084	84	"	"

Table 7. (Continued)

Turbidity (Jackson units)

Category: 220

Format: XXX

Sample type: GRB

Technique code: 038

Investigator code: 002

Funding code: 006

File ID: 4RI

Computer station code	Station name	Time span	Time frequency
00028	28	Apr. - Oct.	Once a month
028.4	28.4	"	"
00029	29	"	"
030.2	30.2	"	"
031.5	31.5	"	"
00071	71	"	Once a season
00072	72	"	"
00073	73	"	"
00074	74	"	"
00075	75	"	"
00076	76	"	"
00077	77	"	"
00078	78	"	"

Table 7. (Continued)

Turbidity (Jackson units)

Computer station code	Station name	Time span	Time frequency
00081	81	Apr. - Oct.	Once a season
00082	82	"	"
00083	83	"	"
00084	84	"	"

Table 7. (Continued)

Deck photometer (micro Einstein M^2/sec.)

Category: 223

Format: XXXX

Sample type: GRB

Technique code: 040

Investigator code: 002

Funding code: 006

File ID: 4RI

Computer station code	Station name	Time span	Time frequency
00028	28	Apr. - Oct.	Once a month
028.4	28.4	"	"
00029	29	"	"
030.2	30.2	"	"
031.5	31.5	"	"
00071	71	"	Once a season
00072	72	"	"
00073	73	"	"
00074	74	"	"
00075	75	"	"
00076	76	"	"
00077	77	"	"
00078	78	"	"

Table 7. (Continued)

Deck photometer (micro Einstein M^2/sec.)

Computer station code	Station name	Time span	Time frequency
00081	81	Apr. - Oct.	Once a season
00082	82	"	"
00083	83	"	"
00084	84	"	"

Table 7. (Continued)

Water photometer (micro Einstein M^2/sec.)

Category: 224

Format: XXXX

Sample type: GRB

Technique code: 040

Investigator code: 002

Funding code: 006

File ID: 4RI

Computer station code	Station name	Time span	Time frequency
00028	28	Apr. - Oct.	Once a month
028.4	28.4	"	"
00029	29	"	"
030.2	30.2	"	"
031.5	31.5	"	"
00071	71	"	Once a season
00072	72	"	"
00073	73	"	"
00074	74	"	"
00075	75	"	"
00076	76	"	"
00077	77	"	"
00078	78	"	"

Table 7. (Continued)

Water photometer (micro Einstein M^2/sec.)

Computer station code	Station name	Time span	Time frequency
00081	81	Apr. - Oct.	Once a season
00082	82	"	"
00083	83	"	"
00084	84	"	"

Table 7. (Continued)

Light penetration (%)

Category: 225

Format: XX.XX

Sample type: GRB

Technique code: 040

Investigator code: 002

Funding code: 006

File ID: 4RI

Computer station code	Station name	Time span	Time frequency
00028	28	Apr. - Oct.	Once a month
028.4	28.4	"	"
00029	29	"	"
030.2	30.2	"	"
031.5	31.5	"	"
00071	71	"	Once a season
00072	72	"	"
00073	73	"	"
00074	74	"	"
00075	75	"	"
00076	76	"	"
00077	77	"	"
00078	78	"	"

Table 7. (Continued)

Light penetration (%)

Computer station code	Station name	Time span	Time frequency
00081	81	Apr. - Oct.	Once a season
00082	82	"	"
00083	83	"	"
00084	84	"	"

Table 7. (Continued)

Transmittance (%)

Category: 226

Format: XX.XX

Sample type: GRB

Technique code: 041

Investigator code: 013

Funding code: 006

File ID: 4RI

Computer station code	Station name	Time span	Time frequency
00028	28	Apr. - Oct.	Once a month
028.4	28.4	"	"
00029	29	"	"
030.2	30.2	"	"
031.5	31.5	"	"
00071	71	"	Once a season
00072	72	"	"
00073	73	"	"
00074	74	"	"
00075	75	"	"
00076	76	"	"
00077	77	"	"
00078	78	"	"

Table 7. (Continued)

Transmittance (%)

Computer station code	Station name	Time span	Time frequency
00081	81	Apr. - Oct.	Once a season
00082	82	"	"
00083	83	"	"
00084	84	"	"

Table 7. (Continued)

Total suspended solids and mineral suspended solids (mg/ℓ)

Category: 250

Format: XXXX.X, XXXX.X

Sample type: GRB

Technique code: 043

Investigator code: 013

Funding code: 006

File ID: 4RI

Computer station code	Station name	Time span	Time frequency
00028	28	Apr. - Oct.	Once a month
028.4	28.4	"	"
00029	29	"	"
030.2	30.2	"	"
031.5	31.5	"	"
00071	71	"	Once a season
00072	72	"	"
00073	73	"	"
00074	74	"	"
00075	75	"	"
00076	76	"	"
00077	77	"	"
00078	78	"	"

Table 7. (Continued)

Total suspended solids and mineral suspended solids (mg/ℓ)

Computer station code	Station name	Time span	Time frequency
00081	81	Apr. - Oct.	Once a season
00082	82	"	"
00083	83	"	"
00084	84	"	"

Table 7. (Continued)

Mineral size distribution - sand, silt, clay (%)

Category: 251

Format: XX.XX, XX.XX, XX.XX

Sample type: SED

Technique code: 078

Investigator code: 013

Funding code: 006

File ID: 4RI

Computer station code	Station name	Time span	Time frequency
00028	28	Apr. - Oct.	Once a month
028.4	28.4	"	"
00029	29	"	"
030.2	30.2	"	"
031.5	31.5	"	"
00071	71	"	Once a season
00072	72	"	"
00073	73	"	"
00074	74	"	"
00075	75	"	"
00076	76	"	"
00077	77	"	"
00078	78	"	"

Table 7. (Continued)

Mineral size distribution - sand, silt, clay (%)

Computer station code	Station name	Time span	Time frequency
00081	81	Apr. - Oct.	Once a season
00082	82	"	"
00083	83	"	"
00084	84	"	"

Table 7. (Continued)

Organics (%)

Category: 252

Format: XX.XX

Sample type: SED

Technique code: 078

Investigator code: 013

Funding code: 006

File ID: 4RI

Computer station code	Station name	Time span	Time frequency
00028	28	Apr. - Oct.	Once a month
028.4	28.4	"	"
00029	29	"	"
030.2	30.2	"	"
031.5	31.5	"	"
00071	71	"	Once a season
00072	72	"	"
00073	73	"	"
00074	74	"	"
00075	75	"	"
00076	76	"	"
00077	77	"	"
00078	78	"	"

Table 7. (Continued)

Organics (%)

Computer station code	Station name	Time span	Time frequency
00081	81	Apr. - Oct.	Once a season
00082	82	"	"
00083	83	"	"
00084	84	"	"

Table 7. (Continued)

Mineralogy (%)

Category:			Format:
	255	Montmorillonite	XX.XX, XX.XX
	256	Illite	XX.XX, XX.XX
	257	Kaolinite	XX.XX, XX.XX
	258	Gibbsite	XX.XX, XX.XX
	259	Chlorite	XX.XX, XX.XX
	260	Quartz	XX.XX, XX.XX
	261	K-Spar	XX.XX, XX.XX
	262	Plagiclase	XX.XX, XX.XX
	263	Talc	XX.XX, XX.XX
	264	Amph.	XX.XX, XX.XX
	265	Clin.	XX.XX, XX.XX
	266	Calcite	XX.XX, XX.XX
	267	Dolomite	XX.XX, XX.XX

Sample type: GRB and SED

Technique code: 078

Investigator code: 013

Funding code: 006

File ID: 4RI

Computer station code	Station name	Time span	Time frequency
00028	28	Apr. - Oct.	Once a month
028.4	28.4	"	"
00029	29	"	"
030.2	30.2	"	"
031.5	31.5	"	"
00071	71	"	Once a season
00072	72	"	"
00073	73	"	"
00074	74	"	"

Table 7. (Continued)

Mineralogy (%)

Computer station code	Station name	Time span	Time frequency
00075	75	Apr. - Oct.	Once a season
00076	76	"	"
00077	77	"	"
00078	78	"	"
00081	81	"	"
00082	82	"	"
00083	83	"	"
00084	84	"	"

Table 7. (Continued)

Total iron (%)

Category: 301

Format: XX.XX

Sample type: GRB

Technique code: 078

Investigator code: 013

Funding code: 006

File ID: 4RI

Computer station code	Station name	Time span	Time frequency
00028	28	Apr. - Oct.	Once a month
028.4	28.4	"	"
00029	29	"	"
030.2	30.2	"	"
031.5	31.5	"	"
00071	71	"	Once a season
00072	72	"	"
00073	73	"	"
00074	74	"	"
00075	75	"	"
00076	76	"	"
00077	77	"	"
00078	78	"	"

Table 7. (Continued)

Total iron (%)

Computer station code	Station name	Time span	Time frequency
00081	81	Apr. - Oct.	Once a season
00082	82	"	"
00083	83	"	"
00084	84	"	"

Table 7. (Continued)

Total carbon (%)

Category: 332

Format: XX.XX

Sample type: SED

Technique code: 058

Investigator code: 013

Funding code: 006

File ID: 4RI

Computer station code	Station name	Time span	Time frequency
00028	28	Apr. - Oct.	Once a month
028.4	28.4	"	"
00029	29	"	"
030.2	30.2	"	"
031.5	31.5	"	"
00071	71	"	Once a season
00072	72	"	"
00073	73	"	"
00074	74	"	"
00075	75	"	"
00076	76	"	"
00077	77	"	"
00078	78	"	"

Table 7. (Continued)

Total carbon (%)

Computer station code	Station name	Time span	Time frequency
00081	81	Apr. - Oct.	Once a season
00082	82	"	"
00083	83	"	"
00084	84	"	"

Table 7. (Continued)

Herbicides (µg/ℓ)

Category: 361 Atrazine
364 Trifluralin
370 Alachlor

Format: X.XX EXXX
X.XX EXXX
X.XX EXXX

Sample type: GRB and SED

Technique code: 077

Investigator code: 026

Funding code: 006

File ID: 4RI

Computer station code	Station name	Time span	Time frequency
00028	28	Apr. - Oct.	Once a month
028.4	28.4	"	"
00029	29	"	"
030.2	30.2	"	"
031.5	31.5	"	"
00071	71	"	Once a season
00072	72	"	"
00073	73	"	"
00074	74	"	"
00075	75	"	"
00076	76	"	"
00077	77	"	"
00078	78	"	"

Table 7. (Continued)

Herbicides (µg/ℓ)

Computer station code	Station name	Time span	Time frequency
00081	81	Apr. - Oct.	Once a season
00082	82	"	"
00083	83	"	"
00084	84	"	"

Table 7. (Continued)

Chlorophyll a (µg/ℓ) and chlorophyll a in vivo (µg/ℓ)

Category: 410

Format: X.XX EXX, X.XX EXX, X.XX EXX

Sample type: HIT

Technique code: 060 and 079

Investigator code: 002 and 035

Funding code: 006 and 002

File ID: 4RI

Computer station code	Station name	Time span	Time frequency
0028T	RR2T	Apr. - Aug.	Once a month
28.4T	RR3T	"	"
0029T	RR4T	"	"
31.5T	RR8.5	"	"
71T	71 transect	"	Once a season
72T	72 "	"	"
73T	73 "	"	"
74T	74 "	"	"
75T	75 "	"	"
76T	76 "	"	"
77T	77 "	"	"

Table 7. (Continued)

Aquatic plants (mg)

Category: 420

A - Potamogeton perfoliatus
B - Potamogeton pectinatus
C - Myriophyllum spicatum
D - Ruppia maritima
E - Zannichellia palustris
F - Elodea canadensis
G - Zosteria maritima

Format: XXXX, XXXXXX
XXXX, XXXXXX
XXXX, XXXXXX
XXXX, XXXXXX
XXXX, XXXXXX
XXXX, XXXXXX
XXXX, XXXXXX

Sample type: GRB

Technique code: 076 and 084

Investigator code: 002

Funding code: 006

File ID: 4RI

Computer station code	Station name	Time span	Time frequency
00028	28	Apr. - Oct.	Once a week
028.4	28.4	"	"
00029	29	"	"
030.2	30.2	"	"
031.5	31.5	"	"
00071	71	"	Once a month
00072	72	"	"
00073	73	"	"
00074	74	"	"
00075	75	"	"
00076	76	"	"
00077	77	"	"
00078	78	"	"

Table 7. (Continued)

Aquatic plants (mg)

Computer station code	Station name	Time span	Time frequency
00081	81	Apr. - Oct.	Once a month
00082	82	"	"
00083	83	"	"
00084	84	"	"

Table 7. (Continued)

White and yellow perch study

Category: Not applicable

Format: 80 column Hollerith cards

Sample type: Not applicable

Technique code: 081 and 082

Investigator code: 035

Funding code: 002

File ID: Data stored on cards

Computer station code	Station name	Time span	Time frequency
00031	C9	Feb. - June	Variable, but approximately twice a week
00032	C8	"	
00033	C7	"	"
00034	C6	"	"
00035	C5	"	"

Table 8. Parameters Measured on Subwatershed Runoff Waters.

Flow rate (liters/sec.)

Category: 130

Format: X.XX EXX

Sample type: GRB

Technique code: 031

Investigator code: 002

Funding code: 005 and 006

File ID: WSD

Computer station code	Station name	Time span	Time frequency
101	North Branch	Jan. - Dec.	Once a week
102	Blue Jay	Jan. - Dec.	Once a week
103	Williamson	Jan. - Dec.	Once a week
105	Sellman North	Jan. - Dec.	Once a week
106	Sellman South	Jan. - Dec.	Once a week
107	Fox Creek	Jan. - Dec.	Once a week
108	Steinlein	Jan. - Dec.	Once a week
109	Cumberstone	Jan. - Dec.	Once a week
110	Forest	Jan. - Dec.	Once a week
111	Pasture	Jan. - Dec.	Once a week
121	Main Branch	Jan. - Dec.	Once a week
122	Fox Point	May - Dec.	Once a week
202	Patuxent River	Jan. - Dec.	Once a week
203	Patuxent River	Jan. - Dec.	Once a week

Table 8. (Continued)

Total flow (liters)

Category: 131

Format: X.XX EXX

Sample type: FLX

Technique code: 033

Investigator code: 002

Funding code: 005 and 006

File ID: WSD

Computer station code	Station name	Time span	Time frequency
101	North Branch	Jan. - Dec.	Once a week
102	Blue Jay	Jan. - Dec.	Once a week
103	Williamson	Jan. - Dec.	Once a week
105	Sellman North	Jan. - Dec.	Once a week
106	Sellman South	Jan. - Dec.	Once a week
107	Fox Creek	Jan. - Dec.	Once a week
108	Steinlein	Jan. - Dec.	Once a week
109	Cumberstone	Jan. - Dec.	Once a week
110	Forest	Jan. - Dec.	Once a week
111	Pasture	Jan. - Dec.	Once a week
121	Main Branch	Jan. - Dec.	Once a week
122	Fox Point	May - Dec.	Once a week
202	Patuxent River	Jan. - Dec.	Once a week
203	Patuxent River	Jan. - Dec.	Once a week

Table 8. (Continued)

Temperature (^{o} Centigrade)

Category: 212

Format: XX.XX

Sample type: GRB

Technique code: 034

Investigator code: 002

Funding code: 005

File ID: WSD

Computer station code	Station name	Time span	Time frequency
099	Spring	Jan. - Nov.	Once a week
101	North Branch	Jan. - Mar.	Once a week
102	Blue Jay	Jan. - Mar.	Once a week
103	Williamson	Jan. - Mar.	Once a week
004	C4	Jan. - Mar.	Once a week
105	Sellman North	Jan. - Dec.	Once a week
106	Sellman South	Jan. - Dec.	Once a week
107	Fox Creek	Jan. - Mar.	Once a week
108	Steinlein	Jan. - Mar.	Once a week
109	Cumberstone	Jan. - Dec.	Once a week
110	Forest	Jan. - Dec.	Once a week
111	Pasture	Jan. - Dec.	Once a week
121	Main Branch	Jan. - Dec.	Once a week
122	Fox Point	May - Dec.	Once a week
202	Patuxent River	Jan. - Dec.	Once a week
203	Patuxent River	Jan. - Dec.	Once a week

Table 8. (Continued)

pH

Category: 213

Format: XX.X

Sample type: GRB

Technique code: 036

Investigator code: 002

Funding code: 005

File ID: WSD

Computer station code	Station name	Time span	Time frequency
099	Spring	Jan. - Nov.	Every two weeks
101	North Branch	Jan. - Mar.	Every two weeks
102	Blue Jay	Jan. - Mar.	Every two weeks
103	Williamson	Jan. - Mar.	Every two weeks
004	C4	Jan. - Mar.	Every two weeks
105	Sellman North	Jan. - Dec.	Every two weeks
106	Sellman South	Jan. - Dec.	Every two weeks
107	Fox Creek	Jan. - Mar.	Every two weeks
108	Steinlein	Jan. - Mar.	Every two weeks
109	Cumberstone	Jan. - Dec.	Every two weeks
110	Forest	Jan. - Dec.	Every two weeks
111	Pasture	Jan. - Dec.	Every two weeks
121	Main Branch	Jan. - Dec.	Every two weeks
122	Fox Point	May - Dec.	Every two weeks
202	Patuxent River	Jan. - Dec.	Every two weeks
203	Patuxent River	Jan. - Dec.	Every two weeks

Table 8. (Continued)

Turbidity (Jackson units)

Category: 220

Format: XXX

Sample type: GRB and FLX (* GRB sample only)

Technique code: 038

Investigator code: 002

Funding code: 005

File ID: WSD

Computer station code	Station name	Time span	Time frequency
099	Spring*	Jan. - Nov.	Every two weeks
101	North Branch	Jan. - Mar.	Once a week
102	Blue Jay	Jan. - Mar.	Once a week
103	Williamson	Jan. - Mar.	Once a week
004	C4*	Jan. - Mar.	Every two weeks
105	Sellman North	Jan. - Dec.	Once a week
106	Sellman South	Jan. - Dec.	Once a week
107	Fox Creek	Jan. - Mar.	Once a week
108	Steinlein	Jan. - Mar.	Once a week
109	Cumberstone	Jan. - Dec.	Once a week
110	Forest	Jan. - Dec.	Once a week
111	Pasture	Jan. - Dec.	Once a week
121	Main Branch	Jan. - Dec.	Once a week
122	Fox Point	Jan. - Dec.	Once a week
202	Patuxent River	Jan. - Dec.	Once a week
203	Patuxent River	Jan. - Dec.	Once a week

Table 8. (Continued)

Total and mineral suspended particulates (mg/liter)

Category: 250

Format: XXXX.X, XXXX.X

Sample type: GRB and FLX (* GRB sample only)

Technique code: 043

Investigator code: 013

Funding code: 005 and 006

File ID: WSD

Computer station code	Station name	Time span	Time frequency
099	Spring*	Jan. - Nov.	Once a week
101	North Branch	Jan. - Mar.	Once a week
102	Blue Jay	Jan. - Mar.	Once a week
103	Williamson	Jan. - Mar.	Once a week
004	C4*	Jan. - Mar.	Once a week
105	Sellman North	Jan. - Dec.	Once a week
106	Sellman South	Jan. - Dec.	Once a week
107	Fox Creek	Jan. - Mar.	Once a week
108	Steinlein	Jan. - Mar.	Once a week
109	Cumberstone	Jan. - Dec.	Once a week
110	Forest	Jan. - Dec.	Once a week
111	Pasture	Jan. - Dec.	Once a week
121	Main Branch	Jan. - Dec.	Once a week
122	Fox Point	May - Dec.	Once a week
202	Patuxent River	Jan. - Dec.	Once a week
203	Patuxent River	Jan. - Dec.	Once a week

Table 8. (Continued)

N total (µg/liter)

Category: 310

Format: X.XX EXX

Sample type: FLX

Technique code: 044

Investigator code: 002

Funding code: 005 and 006

File ID: WSD

Computer station code	Station name	Time span	Time frequency
101	North Branch	Jan. - Mar.	Once a week
102	Blue Jay	Jan. - Mar.	Once a week
103	Williamson	Jan. - Mar.	Once a week
105	Sellman North	Jan. - Dec.	Once a week
106	Sellman South	Jan. - Dec.	Once a week
107	Fox Creek	Jan. - Mar.	Once a week
108	Steinlein	Jan. - Mar.	Once a week
109	Cumberstone	Jan. - Dec.	Once a week
110	Forest	Jan. - Dec.	Once a week
111	Pasture	Jan. - Dec.	Once a week
121	Main Branch	Jan. - Dec.	Once a week
122	Fox Point	May - Dec.	Once a week
202	Patuxent River	Jan. - Dec.	Once a week
203	Patuxent River	Jan. - Dec.	Once a week

Table 8. (Continued)

Nitrite + nitrate, ammonia, nitrite + amino acid, total Kjeldahl nitrogen, and nitrite nitrogen (ug/liter)

Category: 311

Format: X.XX EXX, X.XX EXX, X.XX EXX, X.XX EXX, X.XX EXX

Sample type: GRB

Technique code: 044 - 048

Investigator code: 002

Funding code: 005 and 006

File ID: WSD

Computer station code	Station name	Time span	Time frequency
099	Spring	Jan. - Nov.	Every two weeks
101	North Branch	Jan. - Mar.	Every two weeks
102	Blue Jay	Jan. - Mar.	Every two weeks
103	Williamson	Jan. - Mar.	Every two weeks
004	C4	Jan. - Mar.	Every two weeks
105	Sellman North	Jan. - Dec.	Every two weeks
106	Sellman South	Jan. - Dec.	Every two weeks
107	Fox Creek	Jan. - Mar.	Every two weeks
108	Steinlein	Jan. - Mar.	Every two weeks
109	Cumberstone	Jan. - Dec.	Every two weeks
110	Forest	Jan. - Dec.	Every two weeks
111	Pasture	Jan. - Dec.	Every two weeks
121	Main Branch	Jan. - Dec.	Every two weeks
122	Fox Point	May - Dec.	Every two weeks
202	Patuxent River	Jan. - Dec.	Every two weeks
203	Patuxent River	Jan. - Dec.	Every two weeks

Table 8. (Continued)

Nitrite + nitrate, ammonia, total Kjeldahl nitrogen, and nitrite nitrogen (µg/liter)

Category: 311

Format: X.XX EXX, X.XX EXX, X.XX EXX, X.XX EXX

Sample type: FLX

Technique code: 044 - 048

Investigator code: 002

Funding code: 005 and 006

File ID: WSD

Computer station code	Station name	Time span	Time frequency
101	North Branch	Jan. - Mar.	Once a week
102	Blue Jay	Jan. - Mar.	Once a week
103	Williamson	Jan. - Mar.	Once a week
105	Sellman North	Jan. - Dec.	Once a week
106	Sellman South	Jan. - Dec.	Once a week
107	Fox Creek	Jan. - Mar.	Once a week
108	Steinlein	Jan. - Mar.	Once a week
109	Cumberstone	Jan. - Dec.	Once a week
110	Forest	Jan. - Dec.	Once a week
111	Pasture	Jan. - Dec.	Once a week
121	Main Branch	Jan. - Dec.	Once a week
122	Fox Point	May - Dec.	Once a week
202	Patuxent River	Jan. - Dec.	Once a week
203	Patuxent River	Jan. - Dec.	Once a week

Table 8. (Continued)

P Total (ug/liter)

Category: 320

Format: X.XX EXX

Sample type: GRB

Technique code: 049

Investigator code: 002

Funding code: 005 and 006

File ID: WSD

Computer station code	Station name	Time span	Time frequency
099	Spring	Jan. - Nov.	Every two weeks
101	North Branch	Jan. - Mar.	Every two weeks
102	Blue Jay	Jan. - Mar.	Every two weeks
103	Williamson	Jan. - Mar.	Every two weeks
004	C4	Jan. - Mar.	Every two weeks
105	Sellman North	Jan. - Dec.	Every two weeks
106	Sellman South	Jan. - Dec.	Every two weeks
107	Fox Creek	Jan. - Mar.	Every two weeks
108	Steinlein	Jan. - Mar.	Every two weeks
109	Cumberstone	Jan. - Dec.	Every two weeks
110	Forest	Jan. - Dec.	Every two weeks
111	Pasture	Jan. - Dec.	Every two weeks
121	Main Branch	Jan. - Dec.	Every two weeks
122	Fox Point	May - Dec.	Every two weeks
202	Patuxent River	Jan. - Dec.	Every two weeks
203	Patuxent River	Jan. - Dec.	Every two weeks

Table 8. (Continued)

P total (µg/ liter)

Category: 320

Format: X.XX EXX

Sample type: FLX

Technique code: 049

Investigator code: 002

Funding code: 005 and 006

File ID: WSD

Computer station code	Station name	Time span	Time frequency
101	North Branch	Jan. - Mar.	Once a week
102	Blue Jay	Jan. - Mar.	Once a week
103	Williamson	Jan. - Mar.	Once a week
105	Sellman North	Jan. - Dec.	Once a week
106	Sellman South	Jan. - Dec.	Once a week
107	Fox Creek	Jan. - Mar.	Once a week
108	Steinlein	Jan. - Mar.	Once a week
109	Cumberstone	Jan. - Dec.	Once a week
110	Forest	Jan. - Dec.	Once a week
111	Pasture	Jan. - Dec.	Once a week
121	Main Branch	Jan. - Dec.	Once a week
122	Fox Point	May - Dec.	Once a week
202	Patuxent River	Jan. - Dec.	Once a week
203	Patuxent River	Jan. - Dec.	Once a week

Table 8. (Continued)

Dissolved inorganic phosphorus, dissolved total phosphorus, and inorganic phosphorus (ug/liter)

Category: 321

Format: X.XX EXX, X.XX EXX, X.XX EXX

Sample type: GRB

Technique code: 050

Investigator code: 002

Funding code: 005 and 006

File ID: WSD

Computer station code	Station name	Time span	Time frequency
099	Spring	Jan. - Nov.	Every two weeks
101	North Branch	Jan. - Mar.	Every two weeks
102	Blue Jay	Jan. - Mar.	Every two weeks
103	Williamson	Jan. - Mar.	Every two weeks
004	C4	Jan. - Mar.	Every two weeks
105	Sellman North	Jan. - Dec.	Every two weeks
106	Sellman South	Jan. - Dec.	Every two weeks
107	Fox Creek	Jan. - Mar.	Every two weeks
108	Steinlein	Jan. - Mar.	Every two weeks
109	Cumberstone	Jan. - Dec.	Every two weeks
110	Forest	Jan. - Dec.	Every two weeks
111	Pasture	Jan. - Dec.	Every two weeks
121	Main Branch	Jan. - Dec.	Every two weeks
122	Fox Point	May - Dec.	Every two weeks
202	Patuxent River	Jan. - Dec.	Every two weeks
203	Patuxent River	Jan. - Dec.	Every two weeks

Table 8. (Continued)

Organic carbon - combustion (mg/liter)

Category: 330

Format: X.XX EXX

Sample type: GRB and FLX

Technique code: 058

Investigator code: 002

Funding code: 005 and 006

File ID: WSD

Computer station code	Station name	Time span	Time frequency
121	Main Branch	Jan. - Dec.	Every two weeks
122	Fox Point	Jan. - Dec.	Every two weeks

Table 8. (Continued)

Total organic matter (g cal/liter)

Category: 331

Format: X.XX EXX

Sample type: GRB

Technique code: 051

Investigator code: 002

Funding code: 005 and 006

File ID: WSD

Computer station code	Station name	Time span	Time frequency
099	Spring	Jan. - Nov.	Every two weeks
101	North Branch	Jan. - Mar.	Every two weeks
102	Blue Jay	Jan. - Mar.	Every two weeks
103	Williamson	Jan. - Mar.	Every two weeks
004	C4	Jan. - Mar.	Every two weeks
105	Sellman North	Jan. - Dec.	Every two weeks
106	Sellman South	Jan. - Dec.	Every two weeks
107	Fox Creek	Jan. - Mar.	Every two weeks
108	Steinlein	Jan. - Mar.	Every two weeks
109	Cumberstone	Jan. - Dec.	Every two weeks
110	Forest	Jan. - Dec.	Every two weeks
111	Pasture	Jan. - Dec.	Every two weeks
121	Main Branch	Jan. - Dec.	Every two weeks
122	Fox Point	May - Dec.	Every two weeks
202	Patuxent River	Jan. - Dec.	Every two weeks
203	Patuxent River	Jan. - Dec.	Every two weeks

Table 8. (Continued)

Total organic matter (g cal/liter)

Category: 331

Format: X.XX EXX

Sample type: FLX

Technique code: 051

Investigator code: 002

Funding code: 005 and 006

File ID: WSD

Computer station code	Station name	Time span	Time frequency
101	North Branch	Jan. - Mar.	Once a week
102	Blue Jay	Jan. - Mar.	Once a week
103	Williamson	Jan. - Mar.	Once a week
105	Sellman North	Jan. - Dec.	Once a week
106	Sellman South	Jan. - Dec.	Once a week
107	Fox Creek	Jan. - Mar.	Once a week
108	Steinlein	Jan. - Mar.	Once a week
109	Cumberstone	Jan. - Dec.	Once a week
110	Forest	Jan. - Dec.	Once a week
111	Pasture	Jan. - Dec.	Once a week

Table 8. (Continued)

Herbicides (ug/liter)

Category: 360 Simazine
361 Atrazine
364 Trifluralin
370 Alachlor

Format: X.XX E ± XX

Sample type: FLX

Technique code: 077

Investigator code: 026

Funding code: 002 and 006

File ID: WSD

Computer station code	Station name	Time span	Time frequency
101	North Branch	Jan. - Dec.	Once a week
102	Blue Jay	Jan. - Mar.	Once a week
103	Williamson	Jan. - Mar.	Once a week
105	Sellman North	Jan. - Dec.	Once a week
106	Sellman South	Jan. - Dec.	Once a week
107	Fox Creek	Jan. - Mar.	Once a week
108	Steinlein	Jan. - Mar.	Once a week
109	Cumberstone	Jan. - Dec.	Once a week
110	Forest	Jan. - Dec.	Once a week
111	Pasture	Jan. - Dec.	Once a week
121	Main Branch	Jan. - Dec.	Once a week
122	Fox Point	May - Dec.	Once a week
202	Patuxent River	Mar. - Dec.	Once a week
203	Patuxent River	Mar. - Dec.	Once a week

Table 8. (Continued)

Heavy metals

Category:		Format:
	380 Nickel (ug/liter)	X.XX EXX
	381 Copper (ug/liter)	X.XX EXX
	382 Zine (ug/liter)	X.XX EXX
	383 Lead (ug/liter)	X.XX EXX
	384 Chromium (ug/liter)	X.XX EXX
	385 Cadmium (ug/liter)	X.XX EXX
	386 Manganese (ug/liter)	X.XX EXX
	387 Iron (ug/liter)	X.XX EXX
	388 Potassium (ug/liter)	X.XX EXX
	389 Calcium (ug/liter)	X.XX EXX
	390 Magnesium (ug/liter)	X.XX EXX

Sample type: FLX

Technique code: 052

Investigator code: 026

Funding code: 005 and 006

Computer station code	Station name	Time span	Time frequency
099	Spring	Jan. - Nov.	Once a week
101	North Branch	Jan. - Mar.	Once a week
102	Blue Jay	Jan. - Mar.	Once a week
103	Williamson	Jan. - Mar.	Once a week
105	Sellman North	Jan. - Dec.	Once a week
106	Sellman South	Jan. - Dec.	Once a week
107	Fox Creek	Jan. - Mar.	Once a week
108	Steinlein	Jan. - Mar.	Once a week
109	Cumberstone	Jan. - Dec.	Once a week
110	Forest	Jan. - Dec.	Once a week
111	Pasture	Jan. - Dec.	Once a week
121	Main Branch	Jan. - Dec.	Once a week
122	Fox Point	May - Dec.	Once a week
202	Patuxent River	Mar. - Dec.	Once a week
203	Patuxent River	Mar. - Dec.	Once a week

Table 8. (Continued)

Fecal coliform (#/100 ml)

Category: 710

Format: X.XX EXX

Sample type: GRB

Technique code: 053

Investigator code: 006

Funding code: 002, 005, and 006

File ID: WSD

Computer station code	Station name	Time span	Time frequency
101	North Branch	Jan. - Dec.	Every other week
102	Blue Jay	Jan. - Dec.	Every other week
103	Williamson	Jan. - Dec.	Every other week
105	Sellman North	Jan. - Dec.	Every other week
106	Sellman South	Jan. - Dec.	Every other week
107	Fox Creek	Jan. - Dec.	Every other week
108	Steinlein	Jan. - Dec.	Every other week
109	Cumberstone	Jan. - Dec.	Every other week
110	Forest	Apr. - Dec.	Every other week
111	Pasture	Feb. - Dec.	Every other week
121	Main Branch	Jan. - Dec.	Every other week
122	Fox Point	May - Dec.	Every other week
202	Patuxent River	Mar. - Dec.	Every other week
203	Patuxent River	Mar. - Dec.	Every other week

Table 8. (Continued)

Fecal streptococci (#/100 ml)

Category: 712

Format: X.XX EXX

Sample type: GRB

Technique code: 054

Investigator code: 006

Funding code: 002, 005, and 006

File ID: WSD

Computer station code	Station name	Time span	Time frequency
101	North Branch	Jan. - Dec.	Every other week
102	Blue Jay	Jan. - Dec.	Every other week
103	Williamson	Jan. - Dec.	Every other week
105	Sellman North	Jan. - Dec.	Every other week
106	Sellman South	Jan. - Dec.	Every other week
107	Fox Creek	Jan. - Dec.	Every other week
108	Steinlein	Jan. - Dec.	Every other week
109	Cumberstone	Jan. - Dec.	Every other week
110	Forest	Apr. - Dec.	Every other week
111	Pasture	Feb. - Dec.	Every other week
121	Main Branch	Jan. - Dec.	Every other week
122	Fox Point	May - Dec.	Every other week
202	Patuxent River	Mar. - Dec.	Every other week
203	Patuxent River	Mar. - Dec.	Every other week

Table 8. (Continued)

Total viable heterotrophs (7 days) and total viable heterotrophs (48 hours) (#/ml)

Category: 714

Format: X.XX EXX, X.XX EXX

Sample type: GRB

Technique code: 056

Investigator code: 006

Funding code: 002, 005, and 006

File ID: WSD

Computer station code	Station name	Time span	Time frequency
101	North Branch	Jan. - Dec.	Every other week
102	Blue Jay	Jan. - Dec.	Every other week
103	Williamson	Jan. - Dec.	Every other week
105	Sellman North	Jan. - Dec.	Every other week
106	Sellman South	Jan. - Dec.	Every other week
107	Fox Creek	Jan. - Dec.	Every other week
108	Steinlein	Jan. - Dec.	Every other week
109	Cumberstone	Jan. - Dec.	Every other week
110	Forest	Apr. - Dec.	Every other week
111	Pasture	Feb. - Dec.	Every other week
121	Main Branch	Jan. - Dec.	Every other week
122	Fox Point	May - Dec.	Every other week
202	Patuxent River	Mar. - Dec.	Every other week
203	Patuxent River	Mar. - Dec.	Every other week

Table 9. Parameters Measured in Upland Ecology Research

Litter Fall

Investigator: 032 and 008

Project code: LTR

Funding code: 001, 002, and 008

Technique code: 062

Frequency: Once a month

Time span: January - December

Intensive study sites: 002, 004, and 005

Litter boxes were moved to a new set of locations in 1976. Twenty boxes were arranged in a stratified random grid on a part of site 2, which corresponds to watershed 110 (Figure 9). Twelve boxes were relocated in a stratified random grid at site 5 and 48 boxes were relocated in a stratified random grid within an expanded area which included the original site 4.

Table 9. (Continued)

Litter Fall

Site 2*

Litter box number	Grid coordinates	
101	3809	6085
102	3812	6127
103	3830	6142
104	3828	6144
105	3790	6034
106	3776	6063
107	3783	6096
108	3754	6056
109	3710	6042
110	3790	6111
111	3767	6140
112	3770	6161
113	3727	6169
114	3709	6181
115	3764	6238
116	3741	6221
117	3658	6085
118	3674	6141
119	3674	6155
120	3661	6154

* See Figure 9.

Table 9. (Continued)

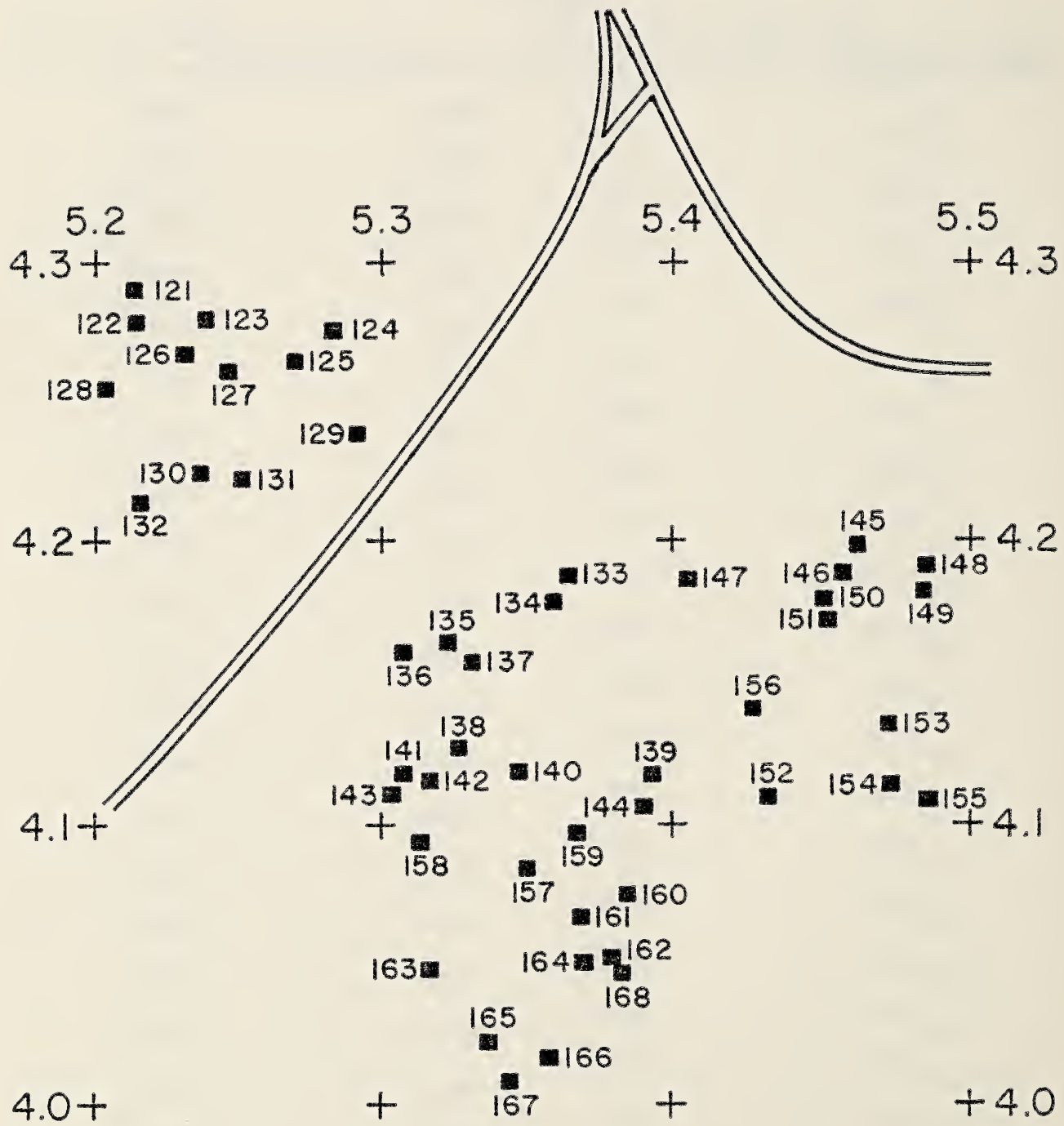
Litter Fall

Site 4

Litter box number	Grid coordinates	
122	4281	5208
130	4225	5232
131	4222	5246
132	4212	5215
135	4174	5319
136	4172	5306
137	4167	5328
141	4115	5304
143	4111	5301
145	4200	5472
148	4190	5475
149	4184	5470
150	4177	5449
151	4174	5455
152	4140	5425
154	4117	5476
155	4111	5485
156	4108	5434
158	4096	5312
163	4052	5317

LEAF LITTER BOX LOCATIONS

SITE 4



RHODE RIVER HECTARE GRID (X 1000)

Table 9. (Continued)

Litter Fall

Site 5

Litter box number	Grid coordinates	
169	3419	6284
170	3413	6327
171	3410	6342
172	3437	6395
173	3358	6265
174	3351	6309
175	3337	6358
176	3331	6362
177	3362	6375
178	3391	6404
179	3396	6442
180	3316	6415

LEAF LITTER BOX LOCATIONS

SITE 5

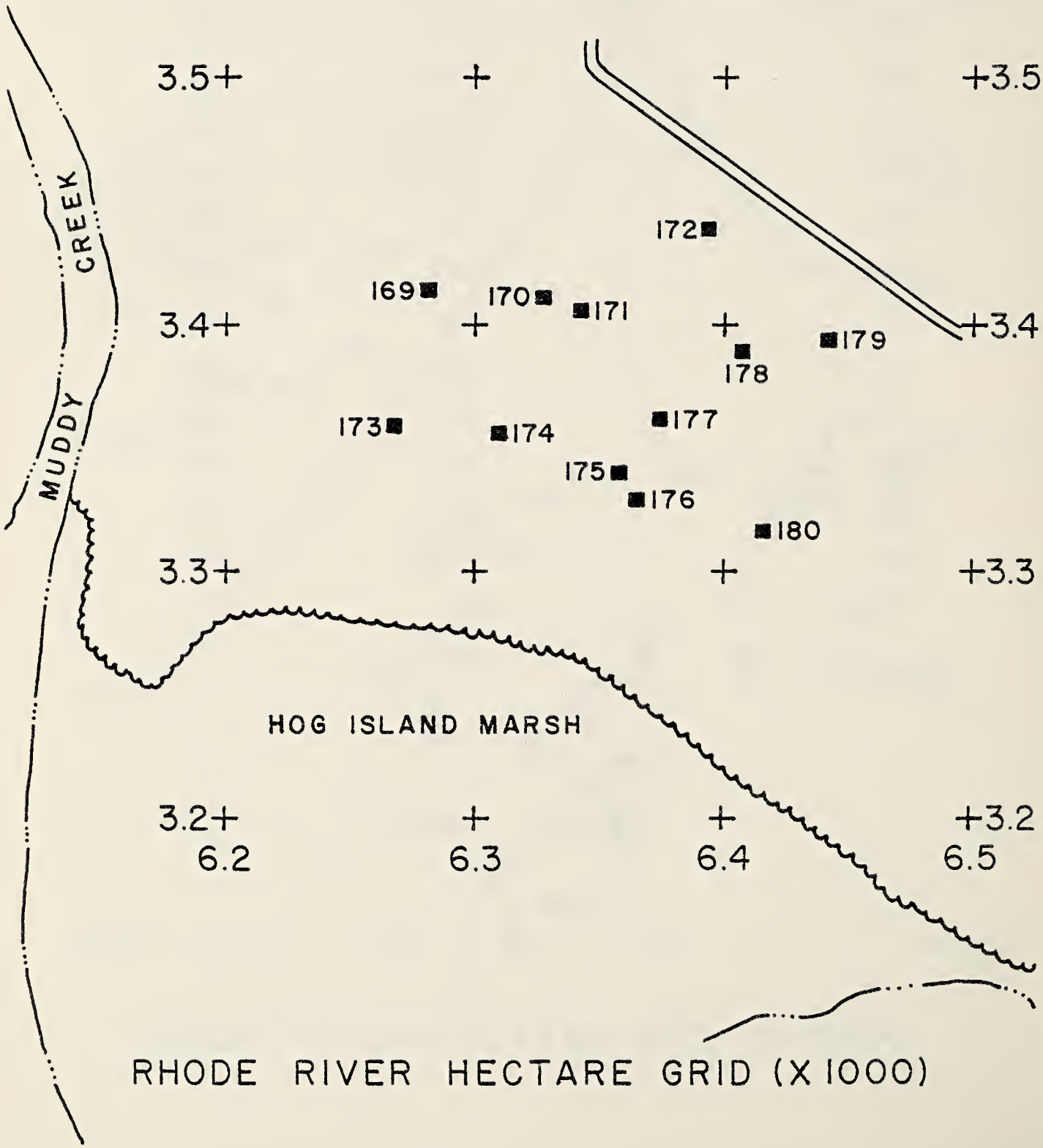


Table 9. (Continued)

Cornfield Weeds

Investigator: 032

Funding code: 001 and 002

Technique: 1 m^2 quadrats were located randomly in 10 locations of watershed 109 and monitored. Weed plant species were identified and counted during two month intervals. At end of growing season all individuals within a quadrat were harvested, dried at 80^{o} C, and divided into above and below ground components. At same time, same species were also sampled in non-cornfield habitats, processed in similar manner to make comparison in biomass and resource allocation of weedy species in two dissimilar habitats.

Seeds of morning glory were collected at end of the growing season as a prelude to autecological studies of that species.

Frequency: During planting, cultivating, and harvesting

Time span: Yearly

Intensive study site: 14

Table 9. (Continued)

Nutrient Leaching Studies in Hardwood Forest

Investigator: 032 and 002

Funding code:

Technique: Soil and leaf samples were placed in funnels in various combinations. Collections were made following each significant precipitation period. Water was then analyzed for total nitrogen, total phosphorus, and nitrate nitrogen.

Frequency: Varied - usually after enough water has come through funnel.

Time span: October - December

Intensive study site: watershed 110

Table 9. (Continued)

Phenological Study of Canopy Trees

Investigator: 032

Funding code: 001 and 002

Technique: In 1976 canopy trees were identified and marked, then in 1977 phenological parameters were measured.

Frequency: Weekly during growing season

Time span: April - November

Intensive study site: 14

Table 9. (Continued)

Ecological Study of Woody Vines

Investigator: 032

Funding code: 001 and 002

Technique: Set up project to measure growth of sweetgum trees with vines and with vines removed. Measured stem growth.

Frequency: Monthly during growing season

Time span: January - December

Experimental site: Dock road

Table 9. (Continued)

Ecological Study of Woodland Herbs

Investigator: 032

Funding code: 001 and 002

Technique: 1. Population studies include marking and monitoring individual plants of three woodland herbs.

Frequency: 1. Annually

Intensive study site: 1. 004

Technique: 2. Reproductive organs of one species (orchid) was studied intensively during 1976 and 1977.

Frequency: 2. Every other day during flowering period.

Intensive study site: 2. 004

Technique: 3. Growth and resource allocation studies were conducted on two herbs during 1976 and 1977.

Frequency: 3. Once a month or weekly during growing season.

Intensive study site: 3. 004

Table 9. (Continued)

Pollination Ecology

Investigator: 037

Funding: U.S. Fish and Wildlife

Technique: 10 x 10 m quadrats are surveyed biweekly for a number of plants for each species and phenology of their flowering, fruiting, and leafing pollination activity of various species of insects on each plant species are measured.

Frequency: Biweekly

Intensive study sites: 4, 5, and 9

Table 9. (Continued)

Ant Populations

Investigator: 009

Project code: ANT

Funding code: 002, 002, and 004

Technique code: 064

Frequency: Monthly

Time-span: March - December

Intensive study sites: 4, 5, 9, 15, and 25

List of Ant Transects

Code	Location	Description
1	Just north of North Branch weir	Stations at intervals of 0, 2, 4, 6, 8, 10, 15, 20, 25, 30, 35, 40, 45, 50 m from stream.
2	Just south of North Branch weir	Floodplain and hillside. Stations at intervals of 0, 2, 4, 6, 8, 10, 15, 20, 25, 30, 35, 40, 45, 50 m from stream.
3	~ 200 m south of North Branch weir	All floodplain. Stations at intervals of 0, 2, 4, 6, 8, 10, 15, 20, 25, 30, 35, 40, 50 m from stream.
4	Lower Stevens field	Young floodplain and old field. Stations at intervals of 0, 2, 4, 6, 8, 10, 15, 20, 25, 30, 35, 40, 45, 50 m from stream.
5	Eastern Stevens field (site 009)	Young floodplain and old field. ~ 200 m north of transect #4. Stations at 0, 2, 4, 6, 8, 10, 15, 20, 25, 30, 35, 40, 45, 50 m.
6	Lower Stevens field	Young floodplain and old field. ~ 350 m north of transect #4. Stations at 0, 2, 4, 6, 8, 10, 15, 20, 25, 30, 35, 40, 45, 50 m.
7	Western triangle (site 004)	Mature hardwood forest above floodplain of North Branch. Twenty stations at 10 m intervals.
8	Stevens field	5-6 year old abandoned field. Twenty stations at 10 m intervals.
9	Lower Stevens field	2 year old abandoned field. Twenty stations at 10 m intervals.
10	Howat pasture	300 m north of entrance to CBCES, off Contees Wharf Road. Twenty stations at 10 m intervals.
11	Howat cornfield	Just south of entrance to CBCES, off Contees Wharf Road. Twenty stations at 10 m intervals.
12	Area 5	35 year old woods just west of Fox Point and south of road. Twenty stations at 10 m intervals.

Table 9. (Continued)

An Insular Deer Population and Its Food Supply

Investigator: 009 and 032

Project code: DEER

Funding code: 001 and 002

Technique code: 083

Frequency: Deer census taken in fall (October - November) and spring (March - April). Vegetation measured at intervals of approximately two months during growing season.

Table 9. (Continued)

Small Mammal Populations

Investigator: 009

Project code: SMM

Funding code: 001 and 002

Technique code: 063

Frequency: Once a month

Time span: January - December

Intensive study sites: 004 and 009

Key to Parameters Coded

Species:

1 = Peromyscus
2 = Blarina
3 = Microtus
4 = Sorex
5 = Mus
6 = Zapus
7 = Tamias

Capture status:

0 = New
1 = Recaptured, alive
2 = Recaptured, dead
3 = New, dead
4 = Escaped

Sex:

1 = Male
2 = Female
3 = Unknown

Age/color:

1 = Adult/brown
2 = Subadult/grey-brown
3 = Juvenile/grey

Reproductive conditions:

1 = Testes ascended
2 = Testes descended, small
3 = Testes descended, large
4 = Testes shriveled
5 = Mammaries, tiny
6 = Mammaries, small
7 = Mammaries, large
8 = Mammaries, w/milk

Pregnant:

0 = No
1 = Yes
2 = Unknown

Ectoparasites:

1 = Flea
2 = Tick
3 = Mite

Time of capture:

1 = Morning, 1st day
2 = Afternoon, 1st day
3 = Morning, 2nd day
4 = Afternoon, 2nd day
5 = Morning, 3rd day

Comments:

1 = released, weak
2 = bloody vagina
3 = No tail
4 = White spot on forehead
5 = Nematodes
6 = Injured animal
7 = Damaged toes
8 = Remarks

Table 9. (Continued)

Lawn Project - Primary Production

Investigator: 005

Project code: TRF

Funding code: 001

Technique: 067

Frequency: Once a week

Time span: June - August

Experiment site: Kirkpatrick-Howat's pasture and lawn

Table 9. (Continued)

Soils (chemical)

Category:	213	pH
	312	Organic nitrogen
	313	Water soluble NO_3
	314	KCl NO_3
	315	Non exchangeable NO_3
	316	Water soluble NH_4
	317	KCl extractable NH_4
	318	Non exchangeable NH_4
	320	Total phosphorus
	322	Water soluble orthophosphorus
	323	KCl extractable orthophosphorus
	324	Acid soluble orthophosphorus
	331	Total organic matter
Format:	213	XX.X
	312	X.XXEXX
	313	X.XXEXX
	314	X.XXEXX
	315	X.XXEXX
	316	X.XXEXX
	317	X.XXEXX
	318	X.XXEXX
	320	X.XXEXX
	322	X.XXEXX
	323	X.XXEXX
	324	X.XXEXX
	331	X.XXEXX

Investigator: 002

Funding code: 006

Technique: 070, 071, and 072

Frequency: Seasonal (4 times a year) and additional intensive studies.

Time span: January - December

Station numbers: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10 at intensive study site #14 (see Figure 8) and sites for 110 and 111.

Table 9. (Continued)

Soils (temperature and moisture)

Category: 212 Temperature (Kohms)
214 Moisture (mg H_2O/cc soil)

Format: XX.X, XXX.X

Investigator: 002

Funding code: 006

Technique code: 069

Frequency: weekly

Time span: January - December

Station numbers: 1, 2, 3, 4, 5, 6, 7, 8, 9, and 10 at intensive study site #14 (see Figure 8) and sites for 110 and 111.

Table 9. (Continued)

Soils (mineralogy) mineral particle size distribution (%)

Category:	251	Mineral size distribution	Format:	XX.XX
	255	Montmorillonite		XX.XX
	256	Illonite		XX.XX
	257	Kaolinite		XX.XX
	258	Gibbsite		XX.XX
	259	Chlorite		XX.XX
	260	Quartz		XX.XX
	261	K-spar		XX.XX
	262	Plagiclase		XX.XX
	263	Talc		XX.XX
	264	Amph.		XX.XX
	265	Clin.		XX.XX
	266	Calcite		XX.XX
	267	Dolomite		XX.XX

Investigator: 013

Funding code: 006

Technique: 078

Frequency: Once

Station numbers: 1, 2, 3, 4, 5, 6, 7, 8, 9, and 10 at intensive study site #14 (see Figure 8) and sites for 110 and 111.

Table 9. (Continued)

Soils (composition)

Category:	301	Total iron (%)	Format: XX.XX
	300	Extractable iron (%)	XX.XX
	312	Organic N	X.XX EXX
	330	Organic carbon	XX.XX
	332	Organic matter	

Investigator: 013

Funding code: 006

Technique: 078

Frequency: Seasonally

Time span: January - December

Station numbers: 1, 2, 3, 4, 5, 6, 7, 8, 9, and 10 at intensive study site #14 (see Figure 8) and sites for 110 and 111.

Table 9. (Continued)

Soils (herbicides)

Category: 361 Atrazine (µg/ℓ)
370 Alachlor (µg/ℓ)

Format: X.XX E±XX, X.XX E±XX

Investigator: 026

Funding code: 006

Technique: 077

Frequency: Variable

Time span: January - December

Station numbers: 1, 2, 3, 4, 5, 6, 7, 8, 9, and 10 at intensive study site #14 (see Figure 8).

Table 9. (Continued)

Soils (microbiology)

Investigator: 006

Funding code: 002

Technique: Total viable bacteria and fecal coliforms and streptococcus were identified as described by technique codes 53, 54, and 56.

Sampling sites: 1, 2, 3, 4, 5, 6, 7, 8, 9, and 10 at intensive study site #14 (see Figure 8).

Plankton Primary Production and Phosphorus Uptake

Investigator: 006 and 036

Funding code: 002

Technique code: 080

Time span: July - December

Experimental site: CBCES dock

Tidal Marsh Community Metabolism

Investigator: 004

Funding code: 001 and 003

Technique: A clear plexiglass gas exchange chamber is used to seal off a one meter square portion of marsh community down to the sediments. It is temperature controlled to ambient inside. Air from a meter or two above the marsh is drawn through the chamber and changes in CO_2 concentration are measured. Light intensity is monitored. Dark measurements are also made.

Times: Frequent all day studies are conducted during the growing season.

Stations: Several plant communities in the high marsh of Kirkpatrick Marsh.

Corn Plant Height and Leaf Area Indexes

Investigator: 002

Funding code: 006

Technique: All leaves from individual plants selected at random at each station were measured. The height of the highest part of the plant was also measured.

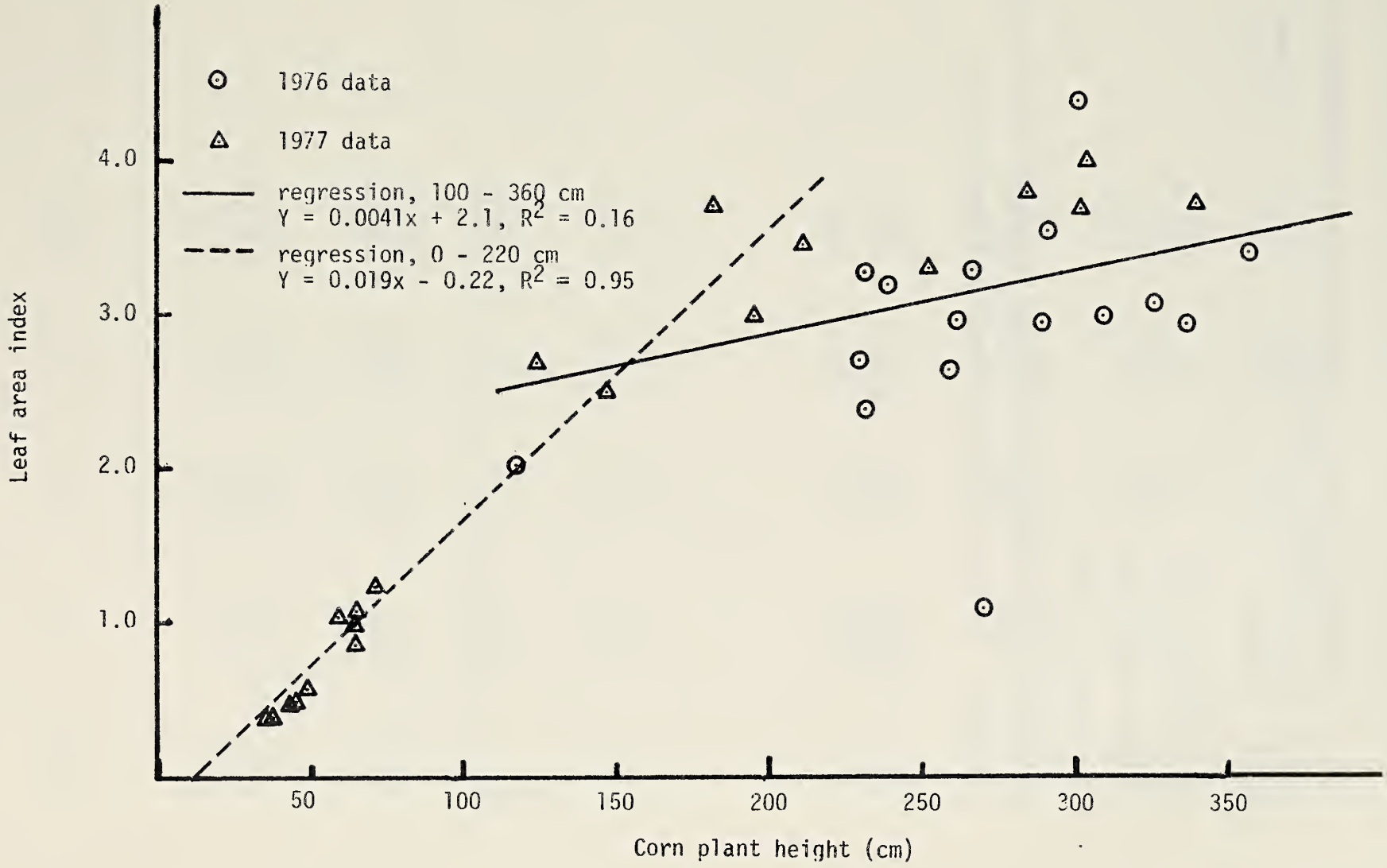
Frequency: 20 day intervals during growing season.

Stations: Five of the soil sampling stations on watershed 109 (Figure 8).

Table 10. Height and leaf area index of corn plants on watershed 109 in 1977.

Station	May 26	June 10	June 16	June 30	July 22
1					
Corn height (cm)	14	36	59	124	284
Leaf area index	-	0.38	1.04	2.70	3.80
3					
Corn height (cm)	14	43	65	181	303
Leaf area index	-	0.47	1.09	3.72	4.01
5					
Corn height (cm)	17	45	64	195	302
Leaf area index	-	0.48	1.00	3.00	3.70
6					
Corn height (cm)	14	37	64	147	252
Leaf area index	-	0.38	0.87	2.52	3.33
8					
Corn height (cm)	17	48	72	211	339
Leaf area index	-	0.58	1.25	3.47	3.74

Figure 12. Relationship between corn plant height and leaf area index on watershed 109 (1976 and 1977)



Biomass and Nutrient Removal of Corn on Watershed 109

Investigator: 002

Funding code: 006

Technique code: 073

Frequency: Approximately every 20 days during the growing season.

Stations: Five soil stations on watershed 109 (Figure 8).

Table 11. Corn plant populations and nutrient mass (grams/m^2) withdrawal by corn plants of watershed 109 in 1977.

A. Total phosphorus

Station	Mean # plants/m^2.	Days after planting 15 (5/26)	30 (6/10)	36 (6/16)	50 (6/30)	72 (7/22)
1	4.3					
Above ground		0.0043	0.12	0.26	0.73	2.0
Below ground		0.0019	0.0077	0.014	0.05	0.14
Total		0.0062	0.13	0.27	0.78	2.1
3	4.7					
Above ground		0.0075	0.089	0.22	1.0	7.3
Below ground		0.0024	0.015	0.016	0.056	0.44
Total		0.0099	0.10	0.24	1.1	7.7
6	4.1					
Above ground		0.0049	0.094	0.22	0.62	1.1
Below ground		0.0015	0.0040	0.012	0.066	0.13
Total		0.0064	0.098	0.23	0.69	1.2
2	4.2					
7	4.0					
10	4.3					
Mean total		0.0075	0.11	0.25	0.86	3.7
σ		0.0021	0.018	0.021	0.22	3.5

		16 (5/26)	31 (6/10)	37 (6/16)	51 (6/30)	73 (7/22)
5	3.9					
Above ground		0.010	0.13	0.22	1.9	2.8
Below ground		0.0020	0.055	0.018	0.082	0.22
Total		0.012	0.19	0.24	2.0	3.0
8	4.1					
Above ground		0.0062	0.16	0.23	1.3	3.6
Below ground		0.0013	0.010	0.023	0.055	0.19
Total		0.0075	0.17	0.25	1.4	3.8
4	4.1					
9	3.6					
Mean total		0.0098	0.18	0.25	1.7	3.4

Table 11. (Continued).

B. Total Kjeldahl nitrogen

Station	Mean # plants/m^2	Days after planting 15 (5/26)	30 (6/10)	36 (6/16)	50 (6/30)	72 (7/22)
1	4.3					
Above ground		0.060	0.86	2.2	4.2	11
Below ground		0.0073	0.056	0.086	0.017	0.52
Total		0.067	0.92	2.3	4.2	12
3	4.7					
Above ground		0.080	0.99	1.8	5.5	15
Below ground		0.012	0.085	0.089	0.072	1.6
Total		0.092	1.1	1.9	5.6	17
6	4.1					
Above ground		0.062	0.66	1.7	2.8	5.2
Below ground		0.016	0.11	0.086	0.014	0.74
Total		0.078	0.77	1.8	2.8	5.9
2	4.2					
7	4.0					
10	4.3					
Mean total		0.079	0.93	2.0	4.2	12
σ		0.013	0.17	0.26	1.4	5.6

		16 (5/26)	31 (6/10)	37 (6/16)	51 (6/30)	73 (7/22)
5	3.9					
Above ground		0.082	0.94	2.1	5.2	11
Below ground		0.011	0.055	0.14	0.011	1.0
Total		0.093	1.0	2.2	5.2	12
8	4.1					
Above ground		0.078	1.3	2.2	4.8	15
Below ground		0.016	0.066	0.16	0.13	1.1
Total		0.094	1.4	2.4	4.9	16
4	4.1					
9	3.6					
Mean total		0.094	1.2	2.3	5.1	14

Table 12. Total phosphorus concentrations in corn plant parts (mg/g dry wt) on watershed 109.

A. May 26, 1977

Total phosphorus (mg/g dry wt)		
Roots	Stalks	Leaves
	Station 1	
2.92		3.12
	Station 3	
2.48		4.00
	Station 5	
2.87		6.55
	Station 6	
1.72		3.31
	Station 8	
1.58		3.03

Table 12. (Continued)

B. June 10, 1977

Total phosphorus (mg/g dry wt)

Roots	Stalks	Leaves
	Station 1	
1.82		5.45
	Station 3	
2.65		3.17
	Station 5	
1.81		4.02
	Station 6	
1.29		4.75
	Station 8	
2.21		3.97

Table 12. (Continued)

C. June 16, 1977

Total phosphorus (mg/g dry wt)

Roots	Stalks	Leaves	Tassels
	Station 1		
1.85	5.02	4.08	-
	Station 3		
2.40	4.91	3.82	-
	Station 5		
1.96	4.64	3.95	-
	Station 6		
1.53	3.76	3.94	-
	Station 8		
1.91	2.91	3.36	-

Table 12. (Continued)

D. June 30, 1977

Total phosphorus (mg/g dry wt)

Roots	Stalks	Leaves	Tassels
	Station 1		
1.20	3.47	2.99	-
	Station 3		
0.995	2.23	3.26	6.10*
	Station 5		
1.39	5.41	3.86	6.10*
	Station 6		
1.98	2.66	3.29	6.10*
	Station 8		
1.11	2.66	4.84	6.10*

* Combined tassels from stations 3, 5, 6, and 8.

Table 12. (Continued)

E. July 22, 1977

Total phosphorus (mg/g dry wt)

Roots	Stalks	Leaves	Tassels	Ears	Husks
			Station 1		
1.55	1.42	3.64	1.98	3.51	2.85
			Station 3		
2.00	2.92	3.79	2.86	4.29	3.34
			Station 5		
1.47	2.69	3.63	1.92	3.27	2.35
			Station 6		
1.12	1.63	2.80	2.76	4.19	3.59
			Station 8		
1.12	2.18	4.17	2.49	3.39	2.04

Table 13. Total Kjeldahl nitrogen concentrations in corn plant parts (mg/g dry wt) on watershed 109.

A. May 26, 1977

Kjeldahl nitrogen (mg/g dry wt)		
Roots	Stalks	Leaves
	Station 1	
11.6		41.5
	Station 3	
12.3		43.0
	Station 5	
16.1		52.6
	Station 6	
17.9		41.6
	Station 8	
19.5		37.3

Table 13. (Continued)

B. June 10, 1977

Kjeldahl nitrogen (mg/g dry wt)

Roots	Stalks	Leaves
	Station 1	
13.4		40.5
	Station 3	
14.8		34.4
	Station 5	
10.1		28.0
	Station 6	
36.8		32.8
	Station 8	
14.5		32.6

Table 13. (Continued)

C. June 16, 1977

Kjeldahl nitrogen (mg/g dry wt)

Roots	Stalks	Leaves	Tassels
	Station 1		
11.0	35.5	37.8	-
	Station 3		
13.5	26.2	38.9	-
	Station 5		
16.2	30.0	44.0	-
	Station 6		
10.9	29.0	32.0	-
	Station 8		
12.9	23.7	33.5	-

Table 13. (Continued)

D. June 30, 1977

Kjeldahl nitrogen (mg/g dry wt)

Roots	Stalks	Leaves	Tassels
	Station 1		
0.431	12.8	22.7	-
	Station 3		
1.27	6.44	23.5	22.8*
	Station 5		
0.183	5.11	26.1	22.8*
	Station 6		
0.412	6.41	18.9	22.8*
	Station 8		
2.63	1.49	25.3	22.8*

* Analysis performed on tassels from stations 3, 5, 6, and 8 combined.

Table 13. (Continued)

E. July 22, 1977

Kjeldahl nitrogen (mg/g dry wt)

Roots	Stalks	Leaves	Tassels	Ears	Husks
		Station 1			
5.72	5.53	23.2	11.6	20.2	16.1
		Station 3			
7.28	8.37	24.8	12.4	21.2	7.87
		Station 5			
6.78	7.27	22.6	9.77	16.4	8.20
		Station 6			
6.41	4.28	19.1	13.9	22.4	13.7
		Station 8			
6.18	6.69	26.3	12.9	14.4	6.14

Table 14. Corn dry weight (g/plant) and total nutrient content (g/plant) for the various plant parts on watershed 109.

A. May 26, 1977 - (day 12 for stations 1, 3, and 6; day 13 for stations 5 and 8).

	Station 1	3	5	6	8	Mean	sd	N:P
Stalks and Leaves								
dry mass	0.33	0.40	0.40	0.37	0.50	0.40	0.063	
total P	0.0010	0.0016	0.0026	0.0012	0.0015	0.0013	0.00085	29:1
Kjeldahl N	0.014	0.017	0.021	0.015	0.019	0.017	0.0029	
Roots								
dry mass	0.15	0.20	0.18	0.21	0.20	0.19	0.024	
total P	0.00044	0.00050	0.00052	0.00036	0.00032	0.00043	0.000087	15:1
Kjeldahl N	0.0017	0.0025	0.0029	0.0038	0.0039	0.0030	0.00092	
Total								
dry mass	0.48	0.60	0.58	0.58	0.70	0.59	0.078	
total P	0.001	0.003	0.004	0.001	0.002	0.002	0.001	23:1
Kjeldahl N	0.016	0.020	0.024	0.019	0.023	0.020	0.0032	

Table 14. (Continued)

B. June 10, 1977 - (day 30 for stations 1, 3, and 6; day 31 for stations 5 and 8)

	Station 1	3	5	6	8	Mean	sd	N:P
Stalks and Leaves								
dry mass	4.9	6.1	8.5	4.9	9.8	6.8	2.2	
total P	0.027	0.019	0.034	0.023	0.039	0.028	0.0081	18:1
Kjeldahl N	0.20	0.21	0.24	0.16	0.32	0.23	0.060	
Roots								
dry mass	0.97	1.2	1.4	0.75	1.1	1.1	0.24	
total P	0.0018	0.0032	0.0025	0.00097	0.0024	0.0021	0.00084	19:1
Kjeldahl N	0.013	0.018	0.014	0.028	0.016	0.018	0.0060	
Total								
dry mass	5.9	7.3	9.9	5.7	10.9	7.9	2.4	
total P	0.029	0.022	0.037	0.024	0.041	0.031	0.0082	17:1
Kjeldahl N	0.21	0.23	0.25	0.19	0.34	0.24	0.058	

Table 14. (Continued)

C. June 16, 1977 - (day 36 for stations 1, 3, and 6; day 37 for stations 5 and 8)

	Station 1	3	5	6	8	Mean	sd	N:P
Leaves								
dry mass	9.5	7.8	9.6	9.3	12.3	9.7	1.6	
total P	0.039	0.030	0.038	0.037	0.041	0.037	0.0042	22:1
Kjeldahl N	0.36	0.30	0.42	0.30	0.412	0.36	0.058	
Stalks								
dry mass	4.4	3.4	3.9	4.2	5.1	4.2	0.63	
total P	0.022	0.017	0.018	0.016	0.015	0.018	0.0027	15:1
Kjeldahl N	0.16	0.089	0.12	0.12	0.12	0.12	0.025	
Roots								
dry mass	1.8	1.4	2.3	1.9	3.0	2.1	0.61	
total P	0.0033	0.0034	0.0045	0.0029	0.0057	0.0040	0.0011	15:1
Kjeldahl N	0.020	0.019	0.037	0.021	0.039	0.027	0.0099	
Total								
dry mass	15.7	12.6	15.8	15.4	20.4	16.0	2.80	
total P	0.064	0.050	0.061	0.056	0.062	0.059	0.0056	19:1
Kjeldahl N	0.54	0.41	0.58	0.44	0.57	0.51	0.078	

Table 14. (Continued)

D. June 30, 1977 - (day 50 for stations 1, 3, and 6; day 51 for stations 5 and 8)

	Station 1	3	5	6	8	Mean	sd	N:P
Tassels								
dry mass	-	0.45	2.0	0.15	1.5	1.0	0.87	
total P*	-	0.0027	0.012	0.00092	0.0092	0.0062	-	8.2:1
Kjeldahl N*	-	0.010	0.046	0.0034	0.034	0.023	-	
Leaves								
dry mass	30.3	38.7	37.8	28.3	42.7	35.6	6.05	
total P	0.0906	0.126	0.146	0.0931	0.207	0.133	0.0477	14.0:1
Kjeldahl N	0.688	0.908	0.985	0.536	1.08	0.839	0.223	
Stalks								
dry mass	23.0	39.4	60.0	21.8	42.5	37.3	15.7	
total P	0.0798	0.0879	0.325	0.0580	0.113	0.133	0.109	3.53:1
Kjeldahl N	0.294	0.254	0.307	0.140	0.0633	0.212	0.106	
Roots								
dry mass	9.3	12.1	15.0	8.1	12.2	11.0	2.7	
total P	0.011	0.0120	0.0209	0.016	0.0135	0.015	0.0040	1.8:1
Kjeldahl N	0.0040	0.0154	0.00275	0.0033	0.0321	0.012	0.013	
Total								
dry mass	62.6	90.7	114.8	58.4	98.9	85.1	24.1	
total P	0.181	0.229	0.504	0.168	0.343	0.285	0.141	8.39:1
Kjeldahl N	0.986	1.187	1.341	0.682	1.21	1.08	0.257	

* Analysis performed on tassels from stations 3, 5, 6, and 8 combined.

Table 14. (Continued)

E. July 22, 1977 - (day 72 for stations 1, 3, and 6; day 73 for stations 5 and 8)

	1	3	5	6	8	Mean	sd	N:P
Husks								
dry mass	23.8	37.7	30.1	4.8	40.8	27.4	14.3	
total P	0.0678	0.126	0.0707	0.017	0.0832	0.0729	0.0390	7.56:1
Kjeldahl N	0.383	0.297	0.247	0.066	0.251	0.249	0.116	
Ears								
dry mass	21.0	29.5	20.8	1.5	56.2	25.8	19.9	
total P	0.074	0.127	0.0680	0.0063	0.191	0.093	0.069	11:1
Kjeldahl N	0.43	0.625	0.341	0.034	0.809	0.45	0.29	
Tassels								
dry mass	3.0	3.4	4.3	3.5	3.8	3.6	0.48	
total P	0.0059	0.010	0.0083	0.010	0.0095	0.0087	0.0017	11:1
Kjeldahl N	0.035	0.042	0.042	0.049	0.049	0.043	0.0059	
Leaves								
dry mass	50.0	44.0	54.0	41.0	52.0	48.0	5.5	
total P	0.18	0.17	0.20	0.12	0.22	0.18	0.038	14:1
Kjeldahl N	1.16	1.1	1.2	0.78	1.4	1.1	0.22	
Stalks								
dry mass	96.5	134.0	136.0	77.5	167.0	122.0	35.3	
total P	0.137	0.391	0.366	0.126	0.364	0.277	0.133	6.55:1
Kjeldahl N	0.534	1.12	0.989	0.332	1.12	0.819	0.363	
Roots								
dry mass	21.0	47.0	38.0	28.0	42.0	35.0	11.0	
total P	0.033	0.094	0.056	0.031	0.047	0.052	0.026	9.9:1
Kjeldahl N	0.12	0.34	0.26	0.18	0.26	0.23	0.085	
Total								
dry mass	215.0	296.0	283.0	156.0	362.0	262.0	79.1	
total P	0.50	0.92	0.77	0.31	0.92	0.68	0.27	9.5:1
Kjeldahl N	2.66	3.5	3.1	1.44	3.9	2.9	0.94	

Table 15. Dry weight to fresh plant weight ratios for corn plant parts for watershed 109.

A. May 26, 1977

Roots	Stalks and leaves
Station 1	
0.12	0.14
Station 3	
0.13	0.13
Station 5	
0.14	0.13
Station 6	
0.13	0.16
Station 8	
0.19	0.16

Table 15. (Continued)

B. June 10, 1977

Roots	Stalks and leaves
Station 1	
0.14	0.12
Station 3	
0.14	0.12
Station 5	
0.19	0.14
Station 6	
0.13	0.12
Station 8	
0.14	0.13

Table 15. (Continued)

C. June 16, 1977

Roots	Stalks	Leaves	Tassels
	Station 1		
0.17	0.07	0.13	-
	Station 3		
0.13	0.07	0.12	-
	Station 5		
0.17	0.08	0.14	-
	Station 6		
0.18	0.07	0.15	-
	Station 8		
0.16	0.08	0.14	-

Table 15. (Continued)

D. June 30, 1977

Roots	Stalks	Leaves	Tassels
	Station 1		
0.16	0.09	0.15	-
	Station 3		
0.20	0.10	0.17	0.15
	Station 5		
0.17	0.12	0.21	0.15
	Station 6		
0.17	0.10	0.17	0.15
	Station 8		
0.21	0.09	0.18	0.15

Table 15. (Continued)

E. July 22, 1977

Roots	Stalks	Leaves	Tassels	Ears	Husks
		Station 1			
0.18	0.17	0.27	0.37	0.12	0.16
		Station 3			
0.15	0.18	0.22	0.43	0.11	0.17
		Station 5			
0.16	0.19	0.28	0.45	0.15	0.23
		Station 6			
0.17	0.17	0.27	0.47	0.17	0.16
		Station 8			
0.16	0.19	0.22	0.36	0.22	0.21

Sunlight - Incident Total White Light Intensities

Technique - Detector was an Eppley precision pyranometer with a clear quartz dome mounted on the top of west side of main building. Data points were recorded every 5 minutes.

Principal Investigator: David L. Correll, Chesapeake Bay Center for Environmental Studies, Smithsonian Institution.

Research Funding: Environmental Sciences Program.

Table 16. JANUARY 1977.

AVERAGE HOURLY LANGLEYS (g-cal/cm^2-min)
Day of 1977

Hour of Day	1	2	3	4	5	6	7	8	9	10	11
500- 600	0.02	0.02	0.02	0.02	0.01	0.01	0.02	0.02	0.02	0.02	0.02
600- 700	0.01	0.02	0.02	0.02	0.01	0.01	0.02	0.02	0.02	0.02	0.02
700- 800	0.08	0.08	0.08	0.07	0.06	0.10	0.04	0.12	0.11	0.03	0.09
800- 900	0.28	0.28	0.19	0.14	0.10	0.21	0.07	0.30	0.26	0.04	0.31
900- 1000	0.49	0.49	0.32	0.21	0.13	0.30	0.11	0.31	0.44	0.08	0.52
1000- 1100	0.66	0.66	0.39	0.26	0.20	0.45	0.48	0.64	0.52	0.11	0.71
1100- 1200	0.75	0.73	0.38	0.30	0.33	0.62	0.70	0.80	0.42	0.49	0.82
1200- 1300	0.74	0.73	0.30	0.47	0.36	0.47	0.48	0.79	0.38	0.28	0.83
1300- 1400	0.65	0.64	0.25	0.30	0.23	0.44	0.51	0.71	0.21	0.28	0.75
1400- 1500	0.47	0.47	0.15	0.24	0.19	0.22	0.32	0.54	0.18	0.14	0.57
1500- 1600	0.27	0.25	0.09	0.14	0.11	0.10	0.23	0.30	0.15	0.05	0.34
1600- 1700	0.07	0.06	0.06	0.06	0.05	0.05	0.07	0.09	0.12	0.05	0.13
1700- 1800	0.01	0.01	0.02	0.01	0.01	0.02	0.01	0.01	0.02	0.01	0.01
1800- 1900	0.01	0.01	0.02	0.02	0.01	0.01	0.01	0.01	0.02	0.01	0.01
1900- 2000	0.01	0.01	0.02	0.02	0.01	0.01	0.01	0.01	0.02	0.01	0.01
Total (g-cal/cm^2-day)	279.1	273.7	146.0	143.2	114.1	188.8	191.5	287.7	185.2	104.5	317.8

[a]value includes some estimated hourly values.

Table 16. JANUARY 1977.

AVERAGE HOURLY LANGLEYS (g-cal/cm^2-min)
Day of 1977

Hour of Day	12	13	14	15	16	17	18	19	20	21	22
500- 600	0.02	0.01	0.02	0.02	0.02	0.03	0.02	0.03	0.02	0.02	0.02
600- 700	0.02	0.02	0.02	0.02	0.02	0.03	0.02	0.03	0.02	0.02	0.02
700- 800	0.17	0.18	0.13	0.08	0.06	0.13	0.09	0.13	0.10	0.09	0.10
800- 900	0.40	0.43	0.22	0.22	0.12	0.26	0.23	0.33	0.31	0.34	0.35
900- 1000	0.63	0.65	0.25	0.32	0.13	0.32	0.51	0.55	0.55	0.48	0.60
1000- 1100	0.79	0.80	0.25	0.35	0.17	0.68	0.74	0.73	0.74	0.67	0.78
1100- 1200	0.87	0.90	0.27	0.52	0.24	0.93	0.85	0.84	0.83	0.78	0.91
1200- 1300	0.85	0.91	0.24	0.39	0.31	0.95	0.87	0.87	0.86	0.78	0.93
1300- 1400	0.69	0.80	0.22	0.34	0.34	0.69	0.81	0.79	0.81	0.70	0.86
1400- 1500	0.60	0.59	0.19	0.25	0.28	0.35	0.66	0.64	0.67	0.51	0.70
1500- 1600	0.37	0.44	0.14	0.22	0.18	0.24	0.42	0.42	0.36	0.30	0.46
1600- 1700	0.17	0.18	0.11	0.09	0.13	0.18	0.21	0.19	0.17	0.17	0.24
1700- 1800	0.01	0.02	0.02	0.01	0.02	0.03	0.03	0.02	0.02	0.02	0.02
1800- 1900	0.01	0.02	0.02	0.01	0.02	0.02	0.02	0.02	0.01	0.02	0.02
1900- 2000	0.01	0.02	0.02	0.01	0.02	0.02	0.02	0.02	0.01	0.02	0.02
Total (g-cal/cm^2-day)	347.7	366.2	140.7	179.1	135.5	304.8	339.9	349.0	339.0	303.9	371.0

[a]value includes some estimated hourly values.

Table 16. JANUARY 1977.

AVERAGE HOURLY LANGLEYS (g-cal/cm^2-min)
Day of 1977

Hour of Day	23	24	25	26	27	28	29	30	31
500- 600	0.02	0.02	0.02	0.02	0.01	0.01	0.02	0.02	0.02
600- 700	0.02	0.02	0.02	0.02	0.01	0.01	0.02	0.02	0.02
700- 800	0.12	0.09	0.06	0.10	0.05	0.05	0.10	0.09	0.08
800- 900	0.40	0.20	0.14	0.25	0.30	0.18	0.36	0.35	0.34
900- 1000	0.62	0.38	0.25	0.44	0.38	0.24	0.59	0.61	0.59
1000- 1100	0.79	0.39	0.38	0.74	0.37	0.35	0.78	0.64	0.77
1100- 1200	0.87	0.38	0.55	0.70	0.41	0.35	0.88	0.70	0.88
1200- 1300	0.84	0.33	0.63	0.80	0.47	0.67	0.90	0.87	0.90
1300- 1400	0.71	0.35	0.55	0.79	0.40	0.73	0.84	0.66	0.83
1400- 1500	0.50	0.24	0.51	0.67	0.49	0.55	0.70	0.56	0.69
1500- 1600	0.31	0.14	0.38	0.40	0.35	0.23	0.46	0.43	0.46
1600- 1700	0.15	0.10	0.16	0.14	0.09	0.08	0.22	0.20	0.21
1700- 1800	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
1800- 1900	0.02	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.01
1900- 2000	0.02	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Total (g-cal/cm^2-day)	333.0	171.8	229.2	312.0	205.9	214.6	362.7	319.7	357.8

[a]value includes some estimated hourly values.

Table 16. FEBRUARY 1977.

AVERAGE HOURLY LANGLEYS (g-cal/cm^2-min)
Day of 1977

Hour of Day	32	33	34	35	36	37	38	39	40	41	42
500- 600	0.01	0.01	0.01	0.01	0.01	0.02	0.02	0.02	0.01	0.01	0.01
600- 700	0.01	0.01	0.01	0.01	0.01	0.02	0.02	0.02	0.01	0.01	0.01
700- 800	0.09	0.12	0.10	0.06	0.03	0.11	0.14	0.12	0.10	0.11	0.11
800- 900	0.30	0.34	0.15	0.30	0.13	0.33	0.35	0.36	0.34	0.33	0.32
900- 1000	0.54	0.58	0.22	0.22	0.32	0.62	0.61	0.61	0.58	0.55	0.55
1000- 1100	0.74	0.77	0.34	0.16	0.47	0.82	0.79	0.80	0.79	0.74	0.74
1100- 1200	0.86	0.88	0.43	0.25	0.82	0.92	0.93	0.92	0.78	0.83	0.86
1200- 1300	0.89	0.88	0.34	0.25	0.73	0.95	0.96	0.94	0.75	0.84	0.90
1300- 1400	0.82	0.83	0.52	0.27	0.73	0.89	0.89	0.87	0.82	0.79	0.84
1400- 1500	0.68	0.67	0.51	0.33	0.31	0.75	0.73	0.73	0.70	0.65	0.71
1500- 1600	0.39	0.45	0.30	0.16	0.33	0.52	0.50	0.49	0.46	0.44	0.49
1600- 1700	0.12	0.20	0.09	0.06	0.15	0.26	0.24	0.23	0.22	0.20	0.22
1700- 1800	0.05	0.04	0.03	0.02	0.05	0.06	0.05	0.03	0.04	0.03	0.03
1800- 1900	0.01	0.00	0.01	0.01	0.01	0.01	0.01	0.01	0.00	0.00	0.00
1900- 2000	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.00	0.00	0.00
Total (g-cal/cm^2-day)	338.4	352.4	190.5	131.7	252.7	384.9	382.5	374.9	344.3	334.6	350.4

[a]value includes some estimated hourly values.

Table 16. FEBRUARY 1977.

AVERAGE HOURLY LANGLEYS (g-cal/cm^2-min)
Day of 1977

Hour of Day	43	44	45	46	47	48	49	50	51	52	53
500- 600	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.02	0.01	0.01	0.01
600- 700	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.02	0.01	0.01	0.01
700- 800	0.08	0.04	0.11	0.05	0.09	0.11	0.15	0.04	0.04	0.09	0.14
800- 900	0.28	0.15	0.32	0.26	0.32	0.37	0.36	0.09	0.05	0.37	0.40
900- 1000	0.55	0.30	0.51	0.57	0.61	0.63	0.55	0.13	0.10	0.67	0.33
1000- 1100	0.50	0.38	0.65	0.80	0.78	0.84	0.77	0.22	0.18	0.85	0.33
1100- 1200	0.52	0.69	0.88	0.93	0.86	0.97	0.79	0.46	0.50	0.98	0.60
1200- 1300	0.45	0.21	0.94	0.97	0.65	0.99	0.63	0.51	0.39	1.01	0.95
1300- 1400	0.33	0.54	0.92	0.90	0.77	0.93	0.49	0.56	0.39	0.96	0.88
1400- 1500	0.16	0.65	0.75	0.76	0.67	0.77	0.38	0.48	0.65	0.80	0.73
1500- 1600	0.11	0.35	0.46	0.54	0.49	0.55	0.23	0.29	0.51	0.58	0.52
1600- 1700	0.05	0.16	0.20	0.27	0.26	0.26	0.07	0.14	0.11	0.31	0.26
1700- 1800	0.02	0.03	0.03	0.05	0.05	0.06	0.03	0.04	0.04	0.06	0.05
1800- 1900	0.00	0.00	0.01	0.00	0.01	0.01	0.01	0.01	0.02	0.01	0.00
1900- 2000	0.00	0.00	0.01	0.00	0.01	0.01	0.02	0.02	0.02	0.01	0.00
Total (g-cal/cm^2-day)	188.7	215.3	350.6	371.5	339.6	398.1	278.7	188.5	187.2	410.1	316.5

[a]value includes some estimated hourly values.

Table 16. FEBRUARY 1977.

AVERAGE HOURLY LANGLEYS (g-cal/cm^2-min)
Day of 1977

Hour of Day	54	55	56	57	58	59
500- 600	0.00	0.01	0.00	0.00	0.01	0.00
600- 700	0.00	0.01	0.00	0.00	0.01	0.02
700- 800	0.05	0.04	0.07	0.05	0.09	0.19
800- 900	0.27	0.12	0.32	0.22	0.31	0.45
900- 1000	0.55	0.18	0.59	0.50	0.69	0.60
1000- 1100	0.79	0.21	0.81	0.53	0.92	0.53
1100- 1200	0.93	0.15	0.95	0.75	0.96	0.65
1200- 1300	0.95	0.22	1.01	0.96	0.79	0.48
1300- 1400	0.93	0.25	1.00	0.85	0.69	1.01
1400- 1500	0.81	0.09	0.88	0.47	0.20	0.84
1500- 1600	0.62	0.04	0.68	0.32	0.10	0.58
1600- 1700	0.38	0.03	0.41	0.21	0.03	0.30
1700- 1800	0.12	0.03	0.13	0.08	0.02	0.05
1800- 1900	0.01	0.02	0.01	0.01	0.01	0.01
1900- 2000	0.01	0.02	0.00	0.01	0.01	0.00
Total (g-cal/cm^2-day)	388.4	92.0	418.1	303.2	292.5	344.5

[a]value includes some estimated hourly values.

Table 16. MARCH 1977.

AVERAGE HOURLY LANGLEYS (g-cal/cm^2-min)
Day of 1977

Hour of Day	60	61	62	63	64	65	66	67	68	69	70
500- 600	0.01	0.00	0.01	0.00	0.00	0.00	0.01	0.01	0.01	0.00	0.01
600- 700	0.01	0.01	0.01	0.01	0.01	0.00	0.01	0.08	0.09	0.08	0.10
700- 800	0.10	0.11	0.12	0.02	0.07	0.03	0.03	0.33	0.33	0.32	0.31
800- 900	0.30	0.39	0.38	0.06	0.24	0.08	0.11	0.61	0.60	0.59	0.56
900- 1000	0.60	0.67	0.65	0.10	0.41	0.13	0.52	0.86	0.83	0.79	0.81
1000- 1100	0.85	0.89	0.87	0.12	0.65	0.27	0.85	1.03	1.00	0.84	0.98
1100- 1200	1.01	1.04	1.00	0.14	0.91	0.31	0.69	1.11	1.08	0.78	1.05
1200- 1300	0.98	1.10	1.06	0.17	1.00	0.40	0.45	1.10	1.07	0.71	1.04
1300- 1400	0.66	1.06	1.03	0.11	0.97	0.43	0.74	0.98	0.95	0.56	0.90
1400- 1500	0.63	0.93	0.89	0.08	0.73	0.44	0.72	0.79	0.77	0.45	0.65
1500- 1600	0.37	0.72	0.68	0.07	0.60	0.39	0.52	0.54	0.49	0.32	0.47
1600- 1700	0.10	0.44	0.33	0.02	0.33	0.21	0.22	0.26	0.23	0.16	0.22
1700- 1800	0.06	0.14	0.09	0.02	0.09	0.09	0.04	0.03	0.03	0.03	0.02
1800- 1900	0.02	0.01	0.02	0.03	0.01	0.02	0.01	0.00	0.00	0.00	0.00
1900- 2000	0.01	0.00	0.01	0.03	0.02	0.01	0.01	0.01	0.00	0.01	0.00
Total (g-cal/cm^2-day)	347.0	453.9	431.9	63.9	365.1	173.0	300.8	468.5	451.0	341.5	428.7

[a]value includes some estimated hourly values.

Table 16. MARCH 1977.

AVERAGE HOURLY LANGLEYS (g-cal/cm^2-min)
Day of 1977

Hour of Day	71	72	73	74	75	76	77	78	79	80	81
500- 600	0.00	0.00	0.00	0.03	0.00	0.15	0.01	0.19	0.02	0.22	0.03
600- 700	0.00	0.00	0.00	0.23	0.00	0.44	0.03	0.49	0.07	0.52	0.05
700- 800	0.10	0.01	0.08	0.52	0.62	0.72	0.04	0.77	0.13	0.79	0.08
800- 900	0.23	0.06	0.65	0.78	0.89	0.96	0.06	1.01	0.19	0.98	0.06
900- 1000	0.49	0.13	0.22	0.99	1.10	1.11	0.10	1.11	0.15	1.06	0.07
1000- 1100	0.73	0.11	0.20	1.11	1.16	1.18	0.26	0.50	0.10	1.18	0.18
1100- 1200	0.87	0.17	0.49	1.15	1.15	1.15	0.69	1.17	0.07	0.88	0.21
1200- 1300	0.55	0.31	0.47	1.08	1.02	0.95	0.57	1.04	0.08	0.62	0.58
1300- 1400	0.85	0.51	0.75	0.92	0.81	0.51	0.13	0.75	0.10	0.39	0.28
1400- 1500	0.75	0.54	0.68	0.69	0.55	0.37	0.43	0.53	0.13	0.22	0.15
1500- 1600	0.61	0.45	0.37	0.41	0.27	0.21	0.21	0.21	0.06	0.11	0.11
1600- 1700	0.26	0.23	0.14	0.13	0.02	0.03	0.03	0.03	0.02	0.03	0.02
1700- 1800	0.07	0.11	0.01	0.01	0.00	0.00	0.00	0.00	0.01	0.01	0.01
1800- 1900	0.02	0.01	0.00	0.00	0.00	0.00	0.01	0.00	0.01	0.01	0.01
1900- 2000	0.00	0.00	0.00	0.01	0.01	0.01	0.00	0.00	0.02	0.01	0.01
Total (g-cal/cm^2-day)	333.6	160.4	244.4	484.7	457.0	470.6	156.4	471.6	74.3	427.0	115.7

[a]value includes some estimated hourly values.

Table 16. MARCH 1977.

AVERAGE HOURLY LANGLEYS (g-cal/cm^2-min)
Day of 1977

Hour of Day	82	83	84	85	86	87	88	89	90
500- 600	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.00	0.01
600- 700	0.10	0.11	0.13	0.14	0.16	0.03	0.13	0.06	0.11
700- 800	0.33	0.40	0.43	0.44	0.46	0.09	0.41	0.20	0.44
800- 900	0.58	0.70	0.73	0.74	0.72	0.12	0.70	0.53	0.70
900- 1000	0.91	0.96	0.98	0.98	0.86	0.17	0.95	0.87	0.97
1000- 1100	1.04	1.14	1.16	1.15	0.98	0.18	1.11	0.88	1.14
1100- 1200	1.02	0.30	0.00	0.20	0.87	0.29	1.19	0.97	0.55
1200- 1300	0.85	0.20	0.10	0.40	1.13	0.30	1.09	1.04	0.20
1300- 1400	0.96	1.15	1.15	1.13	1.01	0.27	1.04	0.65	1.04
1400- 1500	0.80	0.95	0.95	0.94	0.70	0.26	0.56	0.74	0.95
1500- 1600	0.70	0.71	0.70	0.68	0.43	0.31	0.40	0.56	0.70
1600- 1700	0.41	0.42	0.40	0.38	0.27	0.32	0.22	0.39	0.41
1700- 1800	0.11	0.11	0.10	0.09	0.05	0.11	0.07	0.10	0.11
1800- 1900	0.01	0.01	0.00	0.00	0.01	0.01	0.00	0.01	0.01
1900- 2000	0.00	0.00	0.00	0.00	0.01	0.01	0.00	0.00	0.00
Total (g-cal/cm^2-day)	473.2	434.2	413.8	439.6	463.9	152.4	475.3	420.5	440.6

[a]value includes some estimated hourly values.

Table 16. APRIL 1977.

AVERAGE HOURLY LANGLEYS (g-cal/cm^2-min)
Day of 1977

Hour of Day	91	92	93	94	95	96	97	98	99	100	101
500- 600	0.01	0.00	0.01[a]	0.00	0.01	0.01	0.01	0.01	0.01	0.01	0.01
600- 700	0.17	0.02	0.08[a]	0.00	0.02	0.11	0.11	0.11	0.13	0.13	0.11
700- 800	0.46	0.03	0.32[a]	0.00	0.07	0.38	0.40	0.39	0.43	0.33	0.38
800- 900	0.67	0.05	0.26[a]	0.00	0.07	0.70	0.70	0.70	0.73	0.71	0.65
900- 1000	0.58	0.05	0.82[a]	0.07	0.10	0.70	0.97	0.98	1.00	0.91	0.91
1000- 1100	0.53	0.03	0.98[a]	0.09	0.13	0.34	0.97	0.87	1.20[a]	1.02	1.08
1100- 1200	0.36	0.05	1.13[a]	0.06	0.26	0.27	1.28[a]	1.30[a]	1.29[a]	0.20	1.20[a]
1200- 1300	0.70	0.04	1.18[a]	0.05	0.22	0.37	1.29[a]	1.32[a]	1.28[a]	0.66	1.21[a]
1300- 1400	1.11	0.05	1.08[a]	0.05	0.11	0.67	1.20[a]	1.22[a]	1.18[a]	0.80	0.98
1400- 1500	0.92	0.09	0.84[a]	0.06	0.12	0.88	0.84	1.09	1.10	1.05	1.03
1500- 1600	0.66	0.15	0.40[a]	0.08	0.19	0.77	0.79	0.87	0.86	0.80	0.82
1600- 1700	0.37	0.09	0.17[a]	0.05	0.54	0.17	0.40	0.58	0.58	0.51	0.54
1700- 1800	0.10	0.04	0.03[a]	0.03	0.13	0.10	0.16	0.27	0.27	0.19	0.25
1800- 1900	0.01	0.01	0.00	0.01	0.02	0.01	0.05	0.04	0.03	0.04	0.06
1900- 2000	0.01	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.01
Total (g-cal/cm^2-day)	402.3	44.0	438.0[a]	40.7	122.4	330.0	550.2[a]	585.0[a]	605.4[a]	445.2	554.4[a]

[a] value includes some estimated hourly values.

Table 16. APRIL 1977.

AVERAGE HOURLY LANGLEYS (g-cal/cm^2-min)
Day of 1977

Hour of Day	102	103	104	105	106	107	108	109	110	111	112
500- 600	0.02	0.02	0.02	0.02	0.03	0.04	0.04	0.02	0.02	0.04	0.04
600- 700	0.17	0.18	0.18	0.22	0.24	0.26	0.25	0.12	0.13	0.18	0.19
700- 800	0.44	0.45	0.45	0.52	0.55	0.56	0.53	0.22	0.31	0.38	0.54
800- 900	0.71	0.72	0.63	0.81	0.83	0.84	0.78	0.51	0.38	0.68	0.70
900- 1000	0.95	0.96	0.95	1.05	1.07	1.08	1.06	0.85	0.72	0.93	0.98
1000- 1100	1.12	1.08	0.57	1.19[a]	1.20[a]	1.18[a]	1.19[a]	0.51	1.07	1.13	0.64
1100- 1200	1.20[a]	1.17[a]	0.80	1.27[a]	1.30[a]	1.28[a]	1.27[a]	0.10	0.76	1.19[a]	0.14
1200- 1300	1.21[a]	1.23[a]	0.58	1.28[a]	1.28[a]	1.28[a]	1.26[a]	0.60	0.88	1.21[a]	0.40
1300- 1400	1.15	1.15	0.56	1.18[a]	1.20[a]	1.20[a]	0.97	0.66	1.05	1.15	0.24
1400- 1500	0.97	0.97	0.72	1.02	1.01	1.00	0.98	0.86	0.83	0.97	0.79
1500- 1600	0.73	0.66	0.43	0.80	0.74	0.75	0.68	0.59	0.50	0.72	0.58
1600- 1700	0.46	0.46	0.40	0.49	0.43	0.47	0.38	0.47	0.24	0.43	0.46
1700- 1800	0.19	0.19	0.20	0.18	0.14	0.18	0.11	0.19	0.14	0.24	0.17
1800- 1900	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.02	0.03	0.04	0.03
1900- 2000	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.00	0.01	0.01	0.01
Total (g-cal/cm^2-day)	559.8[a]	555.0[a]	390.8	602.4[a]	601.8[a]	607.8[a]	573.0[a]	344.6	431.1	558.0[a]	358.9

[a]value includes some estimated hourly values.

Table 16. APRIL 1977.

AVERAGE HOURLY LANGLEYS (g-cal/cm^2-min)
Day of 1977

Hour of Day	113	114	115	116	117	118	119	120
500- 600	0.03	0.02	0.05	0.04	0.04	0.05	0.06	0.04
600- 700	0.19	0.08	0.25	0.23	0.25	0.25	0.24	0.26
700- 800	0.47	0.21	0.58	0.54	0.54	0.40	0.51	0.54
800- 900	0.69	0.31	0.82	0.87	0.82	0.36	0.84	0.84
900- 1000	0.95	0.28	0.69	1.12	1.01	0.65	1.10	1.08
1000- 1100	0.84	0.24	1.25[a]	1.50[a]	0.88[a]	0.80	1.23[a]	1.32[a]
1100- 1200	0.49	0.32	1.31[a]	0.68[a]	0.92[a]	0.70	1.34[a]	1.34[a]
1200- 1300	0.60	0.47	1.29[a]	0.40	1.27[a]	0.90	1.33[a]	1.25[a]
1300- 1400	0.68	0.35	1.22[a]	0.32	1.24[a]	0.73	1.28[a]	1.11[a]
1400- 1500	0.68	0.23	0.76	0.37	0.72	0.56	1.11	1.10
1500- 1600	0.39	0.25	0.71	0.41	0.74	0.10	0.87	0.86
1600- 1700	0.43	0.45	0.48	0.44	0.48	0.06	0.57	0.58
1700- 1800	0.18	0.10	0.14	0.15	0.16	0.01	0.28	0.29
1800- 1900	0.04	0.01	0.01	0.01	0.02	0.01	0.04	0.05
1900- 2000	0.01	0.01	0.01	0.00	0.01	0.00	0.00	0.01
Total (g-cal/cm^2-day)	404.8	202.8	574.2[a]	420.6[a]	514.8[a]	338.2	648.0[a]	640.2[a]

[a]value includes some estimated hourly values.

Table 16. MAY 1977.

AVERAGE HOURLY LANGLEYS (g-cal/cm^2-min)
Day of 1977

Hour of Day	121	122	123	124	125	126	127	128	129	130	131
500- 600	0.05	0.04	0.01	0.01	0.02	0.05	0.03	0.06	0.08	0.08[a]	0.02[a]
600- 700	0.24	0.20	0.09	0.03	0.06	0.22	0.23	0.32	0.33	0.32[a]	0.26[a]
700- 800	0.53	0.26	0.39	0.08	0.38	0.44	0.38	0.51	0.67	0.65[a]	0.56[a]
800- 900	0.80	0.61	0.33	0.08	0.54	0.79	0.31	0.88	0.63	0.94[a]	0.94[a]
900- 1000	1.04	0.54	0.61	0.16	0.93	1.03	0.38	1.03	0.40	1.15[a]	1.11[a]
1000- 1100	1.18[a]	0.67	0.41	0.35	1.16	1.25[a]	0.34	1.02[a]	0.42	0.84[a]	1.14[a]
1100- 1200	1.22[a]	0.69	0.09	0.33	0.32	1.28[a]	0.14	1.21[a]	0.47	0.58[a]	0.95[a]
1200- 1300	1.33[a]	0.32	0.09	0.34	0.25	1.25[a]	0.11	1.38[a]	0.38	0.69[a]	1.02[a]
1300- 1400	1.26[a]	0.63	0.34	0.24	0.69	1.13	0.14	1.41[a]	0.42	0.66[a]	1.08[a]
1400- 1500	1.08	0.38	0.93	0.29	0.60	0.96	0.19	1.03	0.30	0.56[a]	0.96[a]
1500- 1600	0.83	0.09	0.80	0.16	0.30	0.44	0.16	0.89	0.15[a]	0.43[a]	0.76[a]
1600- 1700	0.59	0.14	0.47	0.04	0.40	0.02	0.12	0.61	0.14[a]	0.41[a]	0.56[a]
1700- 1800	0.29	0.05	0.20	0.03	0.26	0.00	0.08	0.31	0.14[a]	0.08[a]	0.28[a]
1800- 1900	0.05	0.01	0.03	0.01	0.06	0.00	0.05	0.06	0.07[a]	0.04[a]	0.05[a]
1900- 2000	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total (g-cal/cm^2-day)	630.0[a]	283.5	288.6	130.0	358.7	538.2[a]	163.0	643.2[a]	276.0[a]	445.8[a]	581.4[a]

[a]value includes some estimated hourly values.

Table 16. MAY 1977.

AVERAGE HOURLY LANGLEYS (g-cal/cm^2-min)

Hour of Day	Day of 1977										
	132	133	134	135	136	137	138	139	140	141	142
500- 600	0.09[a]	0.07[a]	0.01[a]	0.01[a]	0.00	0.16[a]	0.04	0.02	0.07	0.07	0.09
600- 700	0.29[a]	0.27[a]	0.12[a]	0.18[a]	0.05[a]	0.44[a]	0.19	0.16	0.24	0.28	0.28
700- 800	0.66[a]	0.63[a]	0.41[a]	0.46[a]	0.21[a]	0.71[a]	0.43	0.51	0.52	0.55	0.69
800- 900	0.93[a]	0.88[a]	0.65[a]	0.74[a]	0.50[a]	0.95[a]	0.66	0.67	0.82	0.82	0.98
900-1000	1.14[a]	1.11[a]	1.16[a]	1.01[a]	0.80[a]	1.20[a]	0.89	0.87	1.06	1.05	1.15
1000-1100	1.32[a]	1.26[a]	1.29[a]	1.21[a]	1.26[a]	1.28[a]	1.08	0.60	1.27[a]	1.28[a]	1.33[a]
1100-1200	1.39[a]	1.35[a]	1.40[a]	1.34[a]	1.36[a]	1.36[a]	1.16	0.48	1.36[a]	1.35[a]	1.41[a]
1200-1300	1.39[a]	1.37[a]	1.39[a]	1.37[a]	1.31[a]	1.34[a]	0.98	0.68	1.29[a]	1.34[a]	1.38[a]
1300-1400	1.28[a]	1.18[a]	1.20[a]	1.31[a]	1.20[a]	1.24[a]	1.12	0.42	1.25[a]	1.22[a]	1.28[a]
1400-1500	0.90[a]	0.80[a]	1.14[a]	1.22[a]	1.14[a]	1.07	0.90	0.92	1.03	1.08	1.12
1500-1600	0.86[a]	0.64[a]	0.92[a]	1.13[a]	0.64[a]	0.84	0.75	0.59	0.77	0.86	0.89
1600-1700	0.52[a]	0.53[a]	0.69[a]	0.98[a]	0.42[a]	0.57	0.44	0.27	0.59	0.59	0.62
1700-1800	0.18[a]	0.18[a]	0.41[a]	0.68[a]	0.28[a]	0.28	0.20	0.23	0.30	0.32	0.32
1800-1900	0.03[a]	0.04[a]	0.10[a]	0.39[a]	0.12[a]	0.07	0.03	0.07	0.07	0.09	0.10
1900-2000	0.00	0.00	0.00	0.10[a]	0.00	0.00	0.00	0.01	0.00	0.00	0.00
Total (g-cal/cm^2-day)	658.8[a]	618.6[a]	659.4[a]	727.8[a]	559.2[a]	686.4[a]	532.5	389.8	588.0[a]	654.0[a]	698.4[a]

[a]value includes some estimated hourly values.

Table 16.MAY 1977.

AVERAGE HOURLY LANGLEYS (g-cal/cm^2-min)
Day of 1977

Hour of Day	143	144	145	146	147	148	149	150	151
500- 600	0.05[a]	0.04[a]	0.00	0.13	0.16	0.13	0.09	0.09	0.06
600- 700	0.13[a]	0.18[a]	0.04[a]	0.30	0.35	0.35	0.31	0.15	0.10
700- 800	0.26[a]	0.44[a]	0.12[a]	0.58	0.62	0.64	0.52	0.26	0.22
800- 900	0.30[a]	0.64[a]	0.13[a]	0.89	0.90	0.88	0.74	0.31	0.32
900- 1000	0.54[a]	0.67[a]	0.13[a]	1.14	1.13	1.02	0.53	0.49	0.40
1000- 1100	0.70[a]	0.64[a]	0.16[a]	1.24[a]	1.30[a]	1.29[a]	0.45	0.61	0.52
1100- 1200	0.92[a]	0.75[a]	0.26[a]	1.41[a]	1.38[a]	1.41[a]	0.45	0.61	0.48
1200- 1300	0.82[a]	0.50[a]	0.33	1.41[a]	1.39[a]	1.39[a]	0.48	0.68	0.52
1300- 1400	0.84[a]	0.59[a]	0.40	No Data	1.26[a]	1.27[a]	0.59	0.55	0.50
1400- 1500	0.90[a]	0.67[a]	0.32	0.77	1.11	0.86	0.64	0.43	0.33
1500- 1600	0.86[a]	0.35[a]	0.19	0.94	0.89	0.95	0.73	0.31	0.25
1600- 1700	0.58[a]	0.28[a]	0.17	0.68	0.62	0.69	0.58	0.24	0.13
1700- 1800	0.28[a]	0.10[a]	0.14	0.41	0.38	0.40	0.25	0.13	0.09
1800- 1900	0.07[a]	0.01[a]	0.07	0.12	0.14	0.15	0.09	0.08	0.06
1900- 2000	0.00	0.00	0.01	0.01	0.02	0.02	0.04	0.03	0.07
Total (g-cal/cm^2-day)	435.0[a]	351.6[a]	148.2[a]	601.8[a]	699.0[a]	687.0[a]	395.7	306.4	251.3

[a]value includes some estimated hourly values.

Table 16. JUNE 1977.

AVERAGE HOURLY LANGLEYS (g-cal/cm^2-min)

Hour of Day	Day of 1977										
	152	153	154	155	156	157	158	159	160	161	162
500- 600	0.06	0.09	0.11	0.15	0.11	0.05	0.11	0.17	0.08	0.05	0.16
600- 700	0.16	0.15	0.36	0.40	0.31	0.06	0.40	0.43	0.11	0.10	0.40
700- 800	0.29	0.45	0.45	0.67	0.14	0.17	0.72	0.72	0.16	0.27	0.68
800- 900	0.32	0.75	0.39	0.96	0.36	0.24	1.00	0.98	0.27	0.36	0.97
900- 1000	0.27	1.00	0.36	0.77	0.23	0.27	0.48	0.46	0.18	0.23	0.78
1000- 1100	0.34	1.25[a]	1.08[a]	1.23[a]	0.52	0.63	0.13	1.50[a]	0.33	0.59	0.03
1100- 1200	0.41	1.27[a]	1.45[a]	1.42[a]	0.83	0.33	0.26	1.29[a]	0.40	0.39	0.07
1200- 1300	0.61	1.28[a]	1.47[a]	1.42[a]	0.68	0.44	0.20	1.13[a]	0.64	0.65	0.28
1300- 1400	0.59	1.37[a]	1.27[a]	1.25[a]	0.36	0.80	0.29	0.21	0.43	0.45	0.12
1400- 1500	0.65	0.64	0.68	0.87	0.24	0.20	0.33	0.26	0.27	0.21	0.25
1500- 1600	0.68	0.42	0.98	0.94	0.15	0.50	0.74	0.85	0.13	0.15	0.83
1600- 1700	0.48	0.12	0.71	0.68	0.14	0.21	0.57	0.73	0.16	0.45	0.67
1700- 1800	0.23	0.18	0.42	0.39	0.14	0.16	0.42	0.37	0.13	0.34	0.43
1800- 1900	0.10	0.08	0.14	0.13	0.09	0.08	0.16	0.12	0.08	0.15	0.16
1900- 2000	0.05	0.04	0.02	0.02	0.05	0.03	0.04	0.04	0.02	0.04	0.03
Total (g-cal/cm^2-day)	321.9	545.4[a]	593.4[a]	678.0[a]	266.5	253.9	356.0	555.6[a]	207.1	272.3	358.8

[a]value includes some estimated hourly values.

Table 16. JUNE 1977.

AVERAGE HOURLY LANGLEYS (g-cal/cm^2-min)

Hour of Day	Day of 1977 163	164	165	166	167	168	169	170	171	172	173
500- 600	0.13	0.06	0.12	0.06	0.12	0.09	0.12	0.08	0.06	0.16	0.15
600- 700	0.42	0.17	0.23	0.10	0.30	0.19	0.34	0.27	0.09	0.29	0.41
700- 800	0.68	0.33	0.37	0.09	0.56	0.45	0.32	0.58	0.17	0.63	0.64
800- 900	0.95	0.58	0.56	0.17	0.80	0.57	0.48	0.76	0.33	0.93	0.92
900- 1000	0.76	0.73	0.46	0.26	1.03	0.90	0.91	0.76	0.25	0.86	1.13
1000- 1100	1.37[a]	0.82	0.57	0.39	1.24[a]	1.12	1.33[a]	0.17	0.37	0.08	0.84
1100- 1200	1.41[a]	0.90	0.45	0.37	1.31[a]	0.30	1.38[a]	0.08	0.69	0.20	0.83
1200- 1300	0.98[a]	0.81	0.38	0.44	1.34[a]	0.32	1.38[a]	0.07	0.53	0.31	0.57
1300- 1400	0.72	0.79	0.40	0.55	1.25[a]	0.85	1.30[a]	0.10	0.48	0.23	0.73
1400- 1500	0.40	0.66	0.37	0.77	1.06	0.96	1.06	1.07	0.40	0.30	0.70
1500- 1600	0.81	0.61	0.29	0.51	0.91	0.75	0.78	0.92	0.07	0.70	0.68
1600- 1700	0.35	0.62	0.27	0.40	0.61	0.51	0.43	0.66	0.12	0.60	0.63
1700- 1800	0.16	0.38	0.24	0.23	0.31	0.24	0.09	0.36	0.22	0.40	0.42
1800- 1900	0.12	0.11	0.13	0.12	0.14	0.07	0.17	0.13	0.12	0.15	0.16
1900- 2000	0.03	0.03	0.04	0.04	0.04	0.04	0.02	0.02	0.02	0.02	0.03
Total (g-cal/cm^2-day)	557.4[a]	463.1	299.4	279.6	661.2[a]	446.5	606.6[a]	363.3	239.8	354.3	536.6

[a]value includes some estimated hourly values.

Table 16. JUNE 1977.

AVERAGE HOURLY LANGLEYS (g-cal/cm^2-min)

Hour of Day	Day of 1977 174	175	176	177	178	179	180	181
500- 600	0.13	0.16	0.12	0.10	0.16	0.04	0.05	0.09
600- 700	0.39	0.36	0.28	0.35	0.38	0.22	0.28	0.37
700- 800	0.57	0.49	0.44	0.63	0.64	0.37	0.38	0.69
800- 900	0.91	0.93	0.39	0.91	0.86	0.60	0.44	0.91
900- 1000	1.08	0.95	0.59	0.93	1.08	0.69	0.45	1.12
1000- 1100	1.16[a]	1.24[a]	0.67	1.22[a]	1.26[a]	1.26[a]	0.74	1.12[a]
1100- 1200	1.32[a]	1.30[a]	0.78	1.41[a]	1.32[a]	1.27[a]	1.10[a]	1.32[a]
1200- 1300	1.26[a]	1.01[a]	0.35	1.23[a]	1.14[a]	1.36[a]	0.86[a]	1.24[a]
1300- 1400	1.21[a]	1.16[a]	0.22	1.00[a]	1.23[a]	1.21[a]	0.77[a]	1.22[a]
1400- 1500	1.12[a]	1.09[a]	0.38	0.78[a]	0.95[a]	1.03[a]	0.78[a]	1.14[a]
1500- 1600	0.95	0.66	0.35	0.70	0.63	0.72	0.97	1.01
1600- 1700	0.62	0.50	0.29	0.57	0.44	0.59	0.70	0.61
1700- 1800	0.31	0.28	0.28	0.32	0.32	0.28	0.39	0.52
1800- 1900	0.13	0.15	0.16	0.14	0.11	0.04	0.16	0.17
1900- 2000	0.04	0.04	0.03	0.02	0.03	0.01	0.02	0.05
Total (g-cal/cm^2-day)	672.0[a]	619.2[a]	319.8	618.6[a]	633.0[a]	581.4[a]	485.4[a]	694.8[a]

[a]value includes some estimated hourly values.

Table 16. JULY 1977.

AVERAGE HOURLY LANGLEYS (g-cal/cm^2-min)

Hour of Day	Day of 1977 182	183	184	185	186	187	188	189	190	191	192
500- 600	0.11	0.10	0.09	0.09	0.09	0.08	0.04	0.05	0.11	0.09	0.06
600- 700	0.25	0.33	0.34	0.25	0.29	0.28	0.20	0.11	0.23	0.24	0.08
700- 800	0.58	0.59	0.62	0.58	0.54	0.52	0.16	0.42	0.41	0.46	0.10
800- 900	0.92	0.87	0.88	0.80	0.79	0.73	0.43	0.75	0.55	0.69	0.20
900- 1000	0.68	1.12	1.03	1.05	1.00	0.99	1.01	1.00	0.35	1.06	0.38
1000- 1100	0.65	1.20[a]	1.25[a]	0.49	0.81	0.97	0.74	0.96	0.08	0.73	0.87
1100- 1200	0.43	1.34[a]	1.35[a]	0.18	0.76	0.17	0.10	0.44	0.51	0.91	0.67
1200- 1300	0.49	1.42[a]	1.36[a]	0.81	0.55	0.31	0.33	0.80	0.62	0.29	0.19
1300- 1400	0.43	1.33[a]	1.32[a]	0.54	0.73	0.82	0.23	0.64	0.64	0.41	0.15
1400- 1500	0.25	0.81	0.97	0.82	0.83	1.06	0.46	0.45	0.72	0.69	0.17
1500- 1600	0.80	0.86	0.96	0.42	0.68	0.85	0.15	0.20	0.68	0.65	0.20
1600- 1700	0.64	0.69	0.69	0.44	0.54	0.56	0.16	0.42	0.45	0.25	0.17
1700- 1800	0.38	0.41	0.42	0.23	0.36	0.36	0.34	0.23	0.20	0.09	0.30
1800- 1900	0.15	0.16	0.14	0.15	0.15	0.05	0.21	0.17	0.24	0.08	0.12
1900- 2000	0.04	0.01	0.02	0.02	0.03	0.02	0.04	0.06	0.07	0.04	0.02
Total (g-cal/cm^2-day)	412.5	674.4[a]	686.4[a]	415.8	490.0	467.6	277.9	407.0	359.5	411.2	227.2

[a]value includes some estimated hourly values.

Table 16. JULY 1977.

AVERAGE HOURLY LANGLEYS (g-cal/cm^2-min)
Day of 1977

Hour of Day	193	194	195	196	197	198	199	200	201	202	203
500- 600	0.08	0.07	0.09	0.08	0.09	0.06	0.04	0.09	0.03	0.07	0.04
600- 700	0.24	0.30	0.32	0.31	0.27	0.26	0.17	0.24	0.07	0.25	0.27
700- 800	0.46	0.55	0.59	0.53	0.53	0.51	0.38	0.50	0.22	0.51	0.56
800- 900	0.74	0.74	0.82	0.77	0.81	0.78	0.77	0.83	0.50	0.74	0.79
900- 1000	0.87	0.81	1.07	1.02	1.06	1.01	1.04	1.08	0.91	0.95	1.09
1000- 1100	0.50	0.68	1.28[a]	1.18[a]	1.21[a]	1.19[a]	0.39	1.22[a]	0.71	0.90	1.32[a]
1100- 1200	0.31	0.10	1.42[a]	1.28[a]	1.32[a]	1.27[a]	0.35	1.31[a]	0.45	0.84	1.36[a]
1200- 1300	0.26	0.58	1.35[a]	1.33[a]	1.32[a]	1.29[a]	0.32	1.30[a]	0.50	0.68	1.37[a]
1300- 1400	0.40	0.37	1.32[a]	1.24[a]	1.26[a]	1.21[a]	0.55	1.22[a]	0.71	0.84	1.32[a]
1400- 1500	1.00	0.80	1.05	1.13	1.12	1.08	0.74	1.10	0.65	1.03	1.05
1500- 1600	0.89	0.67	0.95	0.93	0.93	0.86	0.55	0.87	0.54	0.78	0.95
1600- 1700	0.12	0.53	0.68	0.69	0.66	0.59	0.53	0.59	0.56	0.46	0.69
1700- 1800	0.03	0.30	0.42	0.40	0.40	0.34	0.29	0.26	0.31	0.20	0.39
1800- 1900	0.03	0.11	0.16	0.12	0.14	0.11	0.14	0.09	0.11	0.01	0.13
1900- 2000	0.01	0.01	0.01	0.02	0.02	0.02	0.03	0.02	0.02	0.00	0.00
Total (g-cal/cm^2-day)	356.0	399.4	691.8[a]	661.8[a]	668.4[a]	634.8[a]	378.7	643.2[a]	378.8	495.1	679.8[a]

[a]value includes some estimated hourly values.

Table 16. JULY 1977.

AVERAGE HOURLY LANGLEYS (g-cal/cm^2-min)

Hour of Day	Day of 1977 204	205	206	207	208	209	210	211	212
500- 600	0.07	0.06	0.08	0.06	0.08	0.09	0.08	0.03	0.04
600- 700	0.29	0.28	0.15	0.34	0.30	0.27	0.26	0.09	0.19
700- 800	0.57	0.60	0.30	0.56	0.60	0.56	0.48	0.20	0.38
800- 900	0.85	0.76	0.48	0.88	0.88	0.84	0.61	0.15	0.69
900- 1000	0.93	1.00	0.25	1.12	1.11	1.09	0.83	0.51	0.92
1000- 1100	0.98[a]	1.13[a]	0.34	1.26[a]	1.27[a]	1.27[a]	1.01[a]	0.56	1.10
1100- 1200	1.38[a]	1.35[a]	0.32	1.38[a]	1.46[a]	1.38[a]	1.32[a]	0.47	1.16[a]
1200- 1300	1.38[a]	1.35[a]	0.26	1.39[a]	1.22[a]	1.37[a]	1.20[a]	0.40	1.03[a]
1300- 1400	1.36[a]	1.30[a]	0.27	1.33[a]	1.24[a]	1.30[a]	1.10[a]	0.64	1.15
1400- 1500	1.06[a]	0.91	0.34	0.77	0.76	0.86	1.08[a]	0.54	1.00
1500- 1600	0.80	0.86	0.32	0.98	0.94	0.95	0.77	0.70	0.77
1600- 1700	0.25	0.42	0.14	0.51	0.67	0.68	0.60	0.37	0.52
1700- 1800	0.34	0.28	0.07	0.44	0.39	0.39	0.21	0.27	0.28
1800- 1900	0.15	0.13	0.04	0.13	0.13	0.12	0.07	0.08	0.09
1900- 2000	0.00	0.01	0.01	0.00	0.01	0.01	0.01	0.00	0.01
Total (g-cal/cm^2-day)	624.6[a]	626.4[a]	202.7	669.0[a]	663.6[a]	670.8[a]	577.8[a]	301.0	559.8[a]

[a]value includes some estimated hourly values.

Table 16. AUGUST 1977.

AVERAGE HOURLY LANGLEYS (g-cal/cm^2-min)

Hour of Day	Day of 1977 213	214	215	216	217	218	219	220	221	222	223
500- 600	0.05	0.05	0.02	0.04	0.06	0.05	0.05	0.05	0.05	0.04	0.02
600- 700	0.20	0.21	0.07	0.23	0.24	0.23	0.24	0.22	0.23	0.12	0.09
700- 800	0.32	0.38	0.15	0.52	0.50	0.46	0.52	0.48	0.48	0.32	0.41
800- 900	0.60	0.76	0.28	0.78	0.75	0.77	0.79	0.76	0.76	0.59	0.59
900- 1000	0.72	0.97	0.31	1.02	0.98	0.99	1.01	1.00	0.79	0.58	0.86
1000- 1100	0.85	0.79	0.40	1.20[a]	1.05	1.17	0.77	1.05	0.73	0.65	0.64
1100- 1200	0.75	1.04	0.92	0.67[a]	1.26[a]	1.26[a]	0.43	1.28[a]	0.63	0.39	0.59
1200- 1300	0.75	0.92	0.61	1.00[a]	1.25[a]	1.32[a]	0.45	1.20[a]	0.74	0.41	0.20
1300- 1400	0.44	0.95	0.77	0.89	1.23[a]	0.52	0.33	1.07	0.75	0.86	0.55
1400- 1500	0.04	0.85	0.81	1.05	0.13	0.25	0.74	0.87	0.63	0.96	0.97
1500- 1600	0.06	0.83	0.57	0.79	0.47	0.31	0.56	0.78	0.61	0.65	0.76
1600- 1700	0.15	0.37	0.20	0.53	0.54	0.31	0.52	0.51	0.44	0.55	0.45
1700- 1800	0.18	0.16	0.07	0.27	0.27	0.19	0.18	0.21	0.24	0.24	0.23
1800- 1900	0.11	0.05	0.03	0.07	0.07	0.05	0.05	0.03	0.06	0.03	0.05
1900- 2000	0.00	0.00	0.01	0.01	0.00	0.01	0.00	0.01	0.01	0.01	0.00
Total (g-cal/cm^2-day)	313.4	501.1	313.4	544.2[a]	528.0[a]	473.4[a]	400.6	571.2[a]	433.3	385.5	386.8

[a]value includes some estimated hourly values.

Table 16. AUGUST 1977.

AVERAGE HOURLY LANGLEYS (g-cal/cm^2-min)
Day of 1977

Hour of Day	224	225	226	227	228	229	230	231	232	233	234
500- 600	0.03	0.02	0.02	0.04	0.03	0.03	0.04	0.04	0.04	0.03	0.04
600- 700	0.18	0.04	0.12	0.13	0.07	0.16	0.09	0.14	0.09	0.19	0.16
700- 800	0.46	0.14	0.29	0.40	0.29	0.34	0.16	0.37	0.13	0.40	0.30
800- 900	0.73	0.22	0.43	0.63	0.29	0.41	0.36	0.73	0.47	0.37	0.22
900- 1000	0.67	0.19	0.60	0.89	0.48	0.54	0.56	0.90	0.85	0.54	0.51[a]
1000- 1100	0.61	0.30	0.43	1.06	0.67	0.99	0.89	0.77	0.86	0.61	0.37[a]
1100- 1200	0.62	0.55	0.60	0.89	0.44	0.55	0.75	0.56	0.51	0.00	0.88[a]
1200- 1300	0.65	0.67	0.36	0.10	0.30	0.44	0.71	0.29	0.55	0.00	0.38[a]
1300- 1400	0.39	0.68	0.20	0.36	0.84	0.48	0.51	0.59	0.48	0.34	0.84[a]
1400- 1500	0.45	0.60	0.28	0.96	1.05	0.43	0.49	1.00	0.72	0.93	0.82[a]
1500- 1600	0.73	0.31	0.14	0.78	0.83	0.46	0.52	0.75	0.38	0.56	0.54[a]
1600- 1700	0.49	0.29	0.12	0.52	0.50	0.34	0.45	0.40	0.37	0.34	0.40[a]
1700- 1800	0.11	0.15	0.18	0.26	0.27	0.11	0.39	0.25	0.29	0.11	0.18[a]
1800- 1900	0.02	0.04	0.10	0.05	0.09	0.04	0.07	0.08	0.07	0.09	0.04[a]
1900- 2000	0.01	0.02	0.01	0.01	0.02	0.02	0.01	0.02	0.01	0.03	0.00
Total (g-cal/cm^2-day)	371.9	256.3	234.1	428.9	375.4	327.4	365.8	420.5	356.6	278.7	340.8[a]

[a]value includes some estimated hourly values.

Table 16. AUGUST 1977.

AVERAGE HOURLY LANGLEYS (g-cal/cm^2-min)
Day of 1977

Hour of Day	235	236	237	238	239	240	241	242	243
500- 600	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00
600- 700	0.08	0.06	0.17	0.22	0.11	0.10	0.10	0.01	0.08
700- 800	0.22	0.38	0.47	0.40	0.36	0.35	0.36	0.15	0.33
800- 900	0.63	0.47	0.75	0.72	0.62	0.64	0.67	0.36	0.58
900- 1000	0.63	0.81	1.03	1.09	0.91	0.88	0.90	No Data	0.82
1000- 1100	1.09	0.87	1.22	1.18	1.08	1.06	1.08	No Data	1.00
1100- 1200	1.07	0.66	1.32	1.26	1.11	1.16	1.21	No Data	1.13
1200- 1300	0.72	0.07	1.32	1.23	1.11	1.18	1.19	No Data	1.10
1300- 1400	0.37	0.08	1.24	1.12	1.06	1.10	1.12	1.07	0.89
1400- 1500	0.45	0.00	1.08	1.12	0.88	0.92	0.96	0.94	0.64
1500- 1600	0.60	0.08	0.88	0.82	0.60	0.70	0.72	0.57	0.66
1600- 1700	0.45	0.04	0.56	0.36	0.40	0.46	0.46	0.20	0.50
1700- 1800	0.11	0.00	0.28	0.34	0.18	0.18	0.16	0.01	0.06
1800- 1900	0.00	0.00	0.04	0.05	0.01	0.01	0.01	0.00	0.00
1900- 2000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total (g-cal/cm -day)	385.8[a]	211.2[a]	622.2[a]	526.4[a]	505.8[a]	524.4[a]	536.4[a]	198.6[a]	467.4[a]

[a]value includes some estimated hourly values.

Table 16. SEPTEMBER 1977.

AVERAGE HOURLY LANGLEYS (g-cal/cm^2-min)
Day of 1977

Hour of Day	244	245	246	247	248	249	250	251	252	253	254
500- 600	0.02	0.02	0.01	0.01	0.02	0.01	0.02	0.03	0.03	0.08	0.11
600- 700	0.17	0.15	0.13	0.13	0.16	0.14	0.05	0.14	0.11	0.31	0.35
700- 800	0.41	0.40	0.25	0.36	0.39	0.33	0.15	0.26	0.14	0.55	0.68
800- 900	0.66	0.67	0.59	0.66	0.58	0.67	0.23	0.52	0.16	0.79	0.93
900- 1000	0.89	0.89	0.88	0.74	0.81	0.89	0.39	0.77	0.17	0.97	1.14
1000- 1100	1.09	1.07	0.94	0.96	0.98	1.06	0.57	0.70	0.19	0.93	1.14[a]
1100- 1200	1.18	1.17	0.96	0.50	0.46	0.71	0.71	0.81	0.12	0.93	1.23[a]
1200- 1300	1.04	1.18	0.71	0.53	0.45	0.80	0.68	0.64	0.16	0.93	1.23[a]
1300- 1400	1.02	1.01	0.55	0.79	0.41	0.64	0.78	0.72	0.18	0.82	0.98
1400- 1500	0.96	0.63	0.40	0.58	0.24	0.65	0.64	0.82	0.15	0.59	0.51
1500- 1600	0.73	0.52	0.38	0.64	0.14	0.35	0.39	0.44	0.10	0.48	0.57
1600- 1700	0.47	0.29	0.27	0.39	0.40	0.30	0.21	0.30	0.07	0.25	0.26
1700- 1800	0.21	0.11	0.11	0.22	0.12	0.09	0.08	0.15	0.02	0.03	0.04
1800- 1900	0.04	0.02	0.02	0.02	0.01	0.00	0.00	0.01	0.00	0.00	0.00
1900- 2000	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total (g-cal/cm^2-day)	536.9	491.6	373.0	392.1	310.8	397.6	295.0	379.9	97.1	458.4	550.2[a]

[a]value includes some estimated hourly values.

Table 16. SEPTEMBER 1977.

AVERAGE HOURLY LANGLEYS (g-cal/cm^2-min)

Hour of Day	Day of 1977 255	256	257	258	259	260	261	262	263	264	265
500- 600	0.01	0.01	0.01	0.01	0.01	0.00	0.00	0.01	0.01	0.00	0.01
600- 700	0.15	0.10	0.12	0.12	0.10	0.09	0.09	0.10	0.07	0.08	0.08
700- 800	0.38	0.26	0.26	0.21	0.12	0.14	0.25	0.28	0.17	0.15	0.13
800- 900	0.70	0.46	0.46	0.21	0.16	0.34	0.44	0.56	0.32	0.37	0.22
900- 1000	0.95	0.46	0.78	0.33	0.29	0.75	0.74	0.84	0.64	0.42	0.43
1000- 1100	1.14	0.83	0.59	0.33	0.34	0.87	0.96	1.02	0.60	0.57	0.23
1100- 1200	1.16[a]	0.89	0.40	0.44	0.45	0.95	1.02	1.09	0.84	0.49	0.39
1200- 1300	1.18[a]	0.90	0.36	0.45	0.27	0.66	0.72	0.85	0.50	0.23	0.30
1300- 1400	0.68	1.12	0.60	0.40	0.35	0.51	1.04	0.75	0.99	0.21	0.20
1400- 1500	0.63	0.96	0.77	0.43	0.38	0.63	0.80	0.71	0.86	0.11	0.42
1500- 1600	0.41	0.75	0.80	0.29	0.32	0.62	0.68	0.50	0.64	0.24	0.39
1600- 1700	0.37	0.49	0.28	0.22	0.26	0.44	0.43	0.42	0.29	0.21	0.23
1700- 1800	0.14	0.20	0.16	0.14	0.16	0.17	0.17	0.14	0.11	0.09	0.12
1800- 1900	0.05	0.05	0.04	0.06	0.05	0.02	0.03	0.02	0.02	0.03	0.03
1900- 2000	0.01	0.01	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00
Total (g-cal/cm^2-day)	477.6[a]	452.8	340.7	222.1	200.0	372.8	444.3	439.0	363.7	191.9	192.4

[a]value includes some estimated hourly values.

Table 16. SEPTEMBER 1977.

AVERAGE HOURLY LANGLEYS (g-cal/cm^2-min)

Hour of Day	Day of 1977 266	267	268	269	270	271	272	273
500- 600	0.05	0.02	0.01	0.03	0.01	0.02	0.02	0.04
600- 700	0.18	0.10	0.08	0.10	0.15	0.13	0.16	0.15
700- 800	0.35	0.27	0.12	0.13	0.42	0.39	0.43	0.39
800- 900	0.52	0.54	0.13	0.39	0.65	0.67	0.70	0.66
900- 1000	0.44	0.78	0.45	0.71	0.79	0.85	0.93	0.87
1000- 1100	0.67	0.79	0.63	0.83	0.88	1.08	1.09	1.03
1100- 1200	0.74	0.67	0.61	0.44	0.62	0.34	1.15	1.08
1200- 1300	0.50	0.48	0.30	0.28	0.47	0.28	1.13	1.05
1300- 1400	0.41	0.28	0.31	0.61	0.35	0.66	1.01	0.80
1400- 1500	0.55	0.38	0.20	0.36	0.35	0.57	0.81	0.69
1500- 1600	0.37	0.21	0.13	0.27	0.13	0.26	0.56	0.52
1600- 1700	0.18	0.09	0.05	0.13	0.03	0.26	0.26	0.24
1700- 1800	0.04	0.02	0.02	0.04	0.03	0.05	0.04	0.06
1800- 1900	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01
1900- 2000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total (g-cal/cm^2-day)	300.7	278.0	181.5	260.2	293.6	333.9	498.2	455.8

[a]value includes some estimated hourly values.

Table 16. OCTOBER 1977.

AVERAGE HOURLY LANGLEYS (g-cal/cm^2-min)
Day of 1977

Hour of Day	274	275	276	277	278	279	280	281	282	283	284
500- 600	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.02	
600- 700	0.07	0.07	0.10	0.09	0.09	0.05	0.11	0.05	0.05	0.18	
700- 800	0.19	0.22	0.35	0.35	0.34	0.09	0.27	0.15	0.06	0.45	
800- 900	0.16	0.43	0.63	0.64	0.62	0.12	0.52	0.22	0.08	0.69	
900- 1000	0.30	0.80	0.64	0.87	0.84	0.14	0.82	0.45	0.08	0.82	
1000- 1100	0.36	0.97	0.68	1.00	0.80	0.21	1.00	0.35	0.07	0.77	
1100- 1200	0.33	0.51	0.82	0.27	0.91	0.34	1.08	0.28	0.18	0.73	
1200- 1300	0.18	0.39	0.52	0.44	0.74	0.19	1.08	0.36	0.47	0.83	
1300- 1400	0.17	0.56	0.49	0.49	0.76	0.22	0.84	0.24	0.58	0.57	
1400- 1500	0.14	0.76	0.82	0.49	0.51	0.27	0.78	0.15	0.55	0.34	
1500- 1600	0.14	0.56	0.46	0.36	0.35	0.41	0.55	0.09	0.16	0.24	
1600- 1700	0.10	0.27	0.19	0.37	0.23	0.21	0.22	0.05	0.08	0.10	
1700- 1800	0.03	0.05	0.06	0.05	0.05	0.05	0.03	0.01	0.00	0.02	
1800- 1900	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	
1900- 2000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	
Total (g-cal/cm^2-day)	130.6	336.3	346.8	326.1	375.1	140.4	441.0	146.8	143.6	351.5	

NO DATA

[a]value includes some estimated hourly values.

Table 16. OCTOBER 1977.

AVERAGE HOURLY LANGLEYS (g-cal/cm^2-min)
Day of 1977

Hour of Day	285	286	287	288	289	290	291	292	293	294	295
500- 600	NO DATA	NO DATA	NO DATA	NO DATA	NO DATA	NO DATA	NO DATA	NO DATA	NO DATA	NO DATA	NO DATA
600- 700											
700- 800											
800- 900											
900- 1000											
1000- 1100											
1100- 1200											
1200- 1300											
1300- 1400											
1400- 1500											
1500- 1600											
1600- 1700											
1700- 1800											
1800- 1900											
1900- 2000											
Total (g-cal/cm^2-day)											

[a]value includes some estimated hourly values.

Table 16. OCTOBER 1977.

AVERAGE HOURLY LANGLEYS (g-cal/cm^2-min)
Day of 1977

Hour of Day	296	297	298	299	300	301	302	303	304
500- 600									
600- 700									
700- 800									
800- 900									
900- 1000									
1000- 1100									
1100- 1200									
1200- 1300	NO DATA	NO DATA	NO DATA	NO DATA	NO DATA	NO DATA	NO DATA	NO DATA	NO DATA
1300- 1400									
1400- 1500									
1500- 1600									
1600- 1700									
1700- 1800									
1800- 1900									
1900- 2000									
Total (g-cal/cm^2-day)									

[a]value includes some estimated hourly values.

Table 16.NOVEMBER 1977.

AVERAGE HOURLY LANGLEYS (g-cal/cm^2-min)
Day of 1977

Hour of Day	305	306	307	308	309	310	311	312	313	314	315
500- 600	NO DATA	NO DATA	NO DATA	NO DATA	NO DATA	NO DATA	NO DATA	NO DATA	NO DATA	NO DATA	NO DATA
600- 700											
700- 800											
800- 900											
900- 1000											
1000- 1100											
1100- 1200											
1200- 1300											
1300- 1400											
1400- 1500											
1500- 1600											
1600- 1700											
1700- 1800											
1800- 1900											
1900- 2000											
Total (g-cal/cm^2-day)											

[a]value includes some estimated hourly values.

Table 16. NOVEMBER 1977.

AVERAGE HOURLY LANGLEYS (g-cal/cm^2-min)
Day of 1977

Hour of Day	316	317	318	319	320	321	322	323	324	325	326
500- 600	NO DATA	NO DATA	NO DATA	NO DATA	0.00	0.00	0.00	0.00	0.00	0.00	0.00
600- 700					0.00	0.00	0.00	0.01	0.04	0.01	0.00
700- 800					0.12	0.02	0.12	0.11	0.23	0.04	0.02
800- 900					0.36	0.04	0.36	0.25	0.43	0.06	0.06
900- 1000					0.55	0.12	0.58	0.38	0.42	0.09	0.07
1000- 1100					0.73	0.45	0.60	0.47	0.61	0.08	0.07
1100- 1200					0.79	0.70	0.58	0.61	0.73	0.10	0.09
1200- 1300					0.75	0.66	0.77	0.72	0.67	0.12	0.10
1300- 1400					0.62	0.65	0.66	0.59	0.54	0.10	0.06
1400- 1500					0.47	0.45	0.47	0.37	0.30	0.07	0.04
1500- 1600					0.14	0.15	0.23	0.13	0.12	0.02	0.00
1600- 1700					0.03	0.00	0.03	0.00	0.00	0.00	0.00
1700- 1800					0.00	0.00	0.00	0.00	0.00	0.00	0.00
1800- 1900					0.00	0.00	0.00	0.00	0.00	0.00	0.00
1900- 2000					0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total (g-cal/cm^2-day)					272.9	194.9	265.4	218.8	245.6	41.9	30.5

[a]value includes some estimated hourly values.

Table 16. NOVEMBER 1977.

AVERAGE HOURLY LANGLEYS (g-cal/cm^2-min)

Hour of Day	Day of 1977 327	328	329	330	331	332	333	334
500- 600	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
600- 700	0.00	0.01	0.02	0.02	0.05	0.03	0.00	0.00
700- 800	0.02	0.06	0.07	0.06	0.25	0.15	0.01	0.01
800- 900	0.07	0.07	0.07	0.35	0.46	0.22	0.03	0.03
900- 1000	0.09	0.06	0.05	0.67	0.50	0.12	0.05	0.04
1000- 1100	0.09	0.07	0.04	0.33	0.71	0.32	0.05	0.06
1100- 1200	0.10	0.09	0.04	0.37	0.70	0.38	0.04	0.11
1200- 1300	0.07	0.05	0.04	0.42	0.37	0.34	0.06	0.10
1300- 1400	0.06	0.13	0.03	0.31	0.50	0.29	0.07	0.10
1400- 1500	0.04	0.12	0.03	0.23	0.22	0.23	0.05	0.08
1500- 1600	0.01	0.05	0.02	0.08	0.04	0.10	0.03	0.03
1600- 1700	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.00
1700- 1800	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1800- 1900	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1900- 2000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total (g-cal/cm^2-day)	33.4	42.0	27.6	171.7	231.2	132.3	26.5	35.4

[a]value includes some estimated hourly values.

Table 16. DECEMBER 1977.

AVERAGE HOURLY LANGLEYS (g-cal/cm^2-min)

Hour of Day	Day of 1977 335	336	337	338	339	340	341	342	343	344	345
500- 600	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01
600- 700	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01
700- 800	0.02	0.02	0.04	0.02	0.01	0.01	0.08	0.08	0.01	0.09	0.07
800- 900	0.07	0.06	0.16	0.07	0.02	0.05	0.30	0.29	0.03	0.31	0.26
900- 1000	0.09	0.18	0.33	0.22	0.03	0.10	0.51	0.50	0.14	0.52	0.46
1000- 1100	0.13	0.28	0.28	0.34	0.03	0.21	0.68	0.64	0.21	0.67	0.65
1100- 1200	0.14	0.27	0.11	0.77	0.05	0.50	0.74	0.63	0.63	0.73	0.66
1200- 1300	0.09	0.47	0.35	0.66	0.12	0.48	0.72	0.53	0.42	0.71	0.69
1300- 1400	0.12	0.36	0.52	0.36	0.03	0.54	0.61	0.59	0.18	0.60	0.52
1400- 1500	0.09	0.19	0.22	0.24	0.02	0.29	0.42	0.28	0.26	0.42	0.39
1500- 1600	0.08	0.11	0.13	0.08	0.01	0.08	0.19	0.08	0.18	0.19	0.17
1600- 1700	0.01	0.01	0.01	0.01	0.00	0.01	0.02	0.01	0.02	0.02	0.01
1700- 1800	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1800- 1900	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1900- 2000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total (g-cal/cm^2-day)	50.5	117.1	128.2	166.1	19.4	136.8	256.4	220.7	125.1	257.2	238.1

[a]value includes some estimated hourly values.

Table 16. DECEMBER 1977.

AVERAGE HOURLY LANGLEYS (g-cal/cm^2-min)

Hour of Day	Day of 1977 346	347	348	349	350	351	352	353	354	355	356
500- 600	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
600- 700	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
700- 800	0.11	0.03	0.02	0.05	0.09	0.02	0.00	0.01	0.01	0.00	0.02
800- 900	0.37	0.16	0.03	0.26	0.28	0.09	0.00	0.04	0.04	0.01	0.19
900- 1000	0.52	0.48	0.04	0.49	0.42	0.12	0.01	0.06	0.11	0.08	0.40
1000- 1100	0.64	0.27	0.05	0.62	0.60	0.13	0.04	0.11	0.11	0.15	0.56
1100- 1200	0.71	0.66	0.05	0.68	0.67	0.11	0.04	0.08	0.09	0.19	0.65
1200- 1300	0.70	0.73	0.07	0.66	0.66	0.13	0.07	0.06	0.04	0.21	0.65
1300- 1400	0.58	0.55	0.08	0.55	0.56	0.13	0.06	0.07	0.04	0.30	0.57
1400- 1500	0.39	0.35	0.05	0.37	0.38	0.09	0.05	0.14	0.03	0.21	0.40
1500- 1600	0.21	0.18	0.02	0.16	0.18	0.06	0.02	0.05	0.01	0.08	0.20
1600- 1700	0.02	0.01	0.00	0.01	0.01	0.01	0.00	0.01	0.00	0.03	0.03
1700- 1800	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1800- 1900	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1900- 2000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total (g-cal/cm^2-day)	260.4	207.1	27.4	230.3	230.7	53.3	17.7	36.7	29.8	75.2	220.7

[a]value includes some estimated hourly values.

Table 16. DECEMBER 1977.

AVERAGE HOURLY LANGLEYS (g-cal/cm^2-min)

Hour of Day	Day of 1977 357	358	359	360	361	362	363	364	365
500- 600	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.15
600- 700	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.16
700- 800	0.03	0.02	0.00	0.04	0.06	0.05	0.07	0.03	0.17
800- 900	0.14	0.19	0.02	0.23	0.31	0.25	0.32	0.13	0.26
900- 1000	0.32	0.39	0.02	0.45	0.49	0.45	0.49	0.27	0.36
1000- 1100	0.48	0.57	0.06	0.60	0.63	0.60	0.59	0.31	0.36
1100- 1200	0.31	0.66	0.21	0.65	0.71	0.68	0.68	0.37	0.32
1200- 1300	0.25	0.66	0.39	0.72	0.72	0.60	0.66	0.24	0.39
1300- 1400	0.26	0.57	0.24	0.64	0.63	0.46	0.61	0.14	0.40
1400- 1500	0.18	0.30	0.20	0.46	0.45	0.28	0.43	0.07	0.33
1500- 1600	0.10	0.12	0.12	0.24	0.19	0.14	0.21	0.12	0.23
1600- 1700	0.02	0.01	0.02	0.04	0.03	0.03	0.04	0.15	0.09
1700- 1800	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.15	0.06
1800- 1900	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.16	0.08
1900- 2000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.15	0.08
Total (g-cal/cm^2-day)	125.9	209.1	76.2	245.0	253.8	214.6	248.8	172.9	265.3

[a]value includes some estimated hourly values.

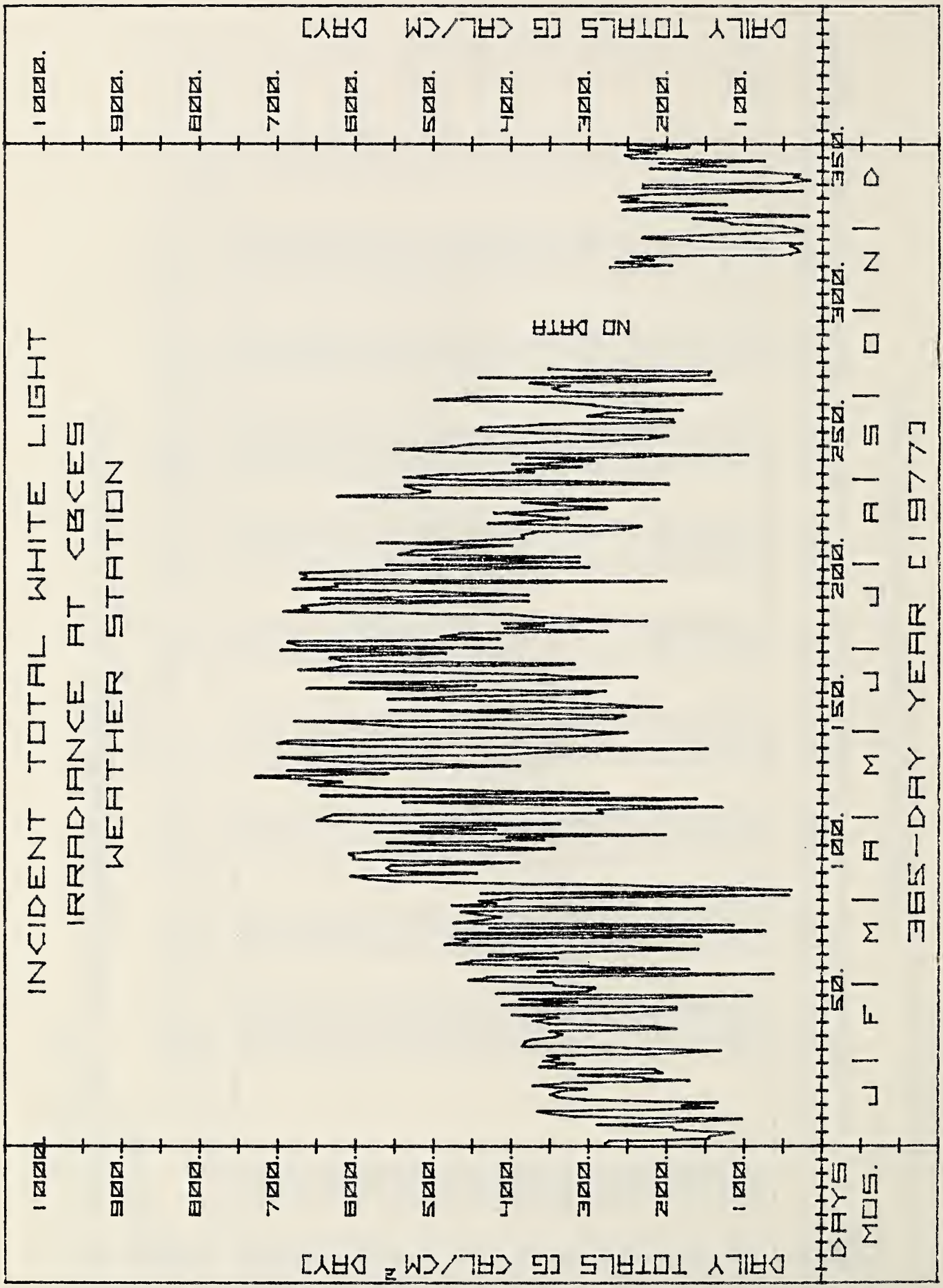


Figure 13. Sunlight

Weather Station Data

(map 2)

% Relative Humidity and Air Temperature - Measured using a Hygrothermograph - Belfort Instrument Company.

Barometric Pressure - Measured using an aneroid type barometer. Microbargraph - Belfort Instrument Company.

Rainfall - Measured using a weighing rain gauge - Belfort Instrument Company - at the weather station, Stevens tipping bucket rain gauges, and paper tape (five intervals) data acquisition systems at six recording stations, and manually read, total event gauges at other locations.

Evaporation - Measurements are taken of the amount of water evaporating from an open pan. Wind run adjacent to the pan and maximum/minimum temperatures of the water in the pan were also taken.

Wind Speed and Direction at Laboratory - A R. M. Young Company wind vane and anemonometer set mounted on a tower 4 meters above the top of a silo (13 meters elevation) were used to sense wind speed and direction. These signals were recorded on a magnetic tape cassette by a Martek, model 410 data acquisition system.

Principal Investigator: Daniel Higman and David Correll, Chesapeake Bay Center for Environmental Studies, Smithsonian Institution.

Research Funding: Smithsonian Institution.

Table 17. Weather Station Data (Relative humidity, air temperature, and barometric pressure).

Day of 1977	Relative Humidity %		Air Temperature °C		Barometric Pressure mm of Mercury	
	Max.	Min.	Max.	Min.	Max.	Min.
1	59	42	-4.4	-11.7	763	755
2	93	45	-1.1	-11.1	767	763
3	99	54	-3.3	-11.7	768	762
4	99	54	1.1	-7.2	763	760
5	98	84	-3.9	-10.0	764	761
6	98	62	-2.2	-12.2*	766	756
7	98	43	0	-10.6	760	749
8	86	36	-3.3	-14.4*	765	760
9	99	49	-3.3	-14.4*	765	758
10	99	40	-1.1	-8.9	757	741
11	50	34	-6.1	-13.3*	770	756
12	80	34	-5.0	-17.2*	773	766
13	-	34	-5.6	-17.8*	775	768
14	98	50	-2.8	-7.8	768	752
15	98	77	1.1	-8.9	758	752
16	99	47	-4.4	-16.7*	761	754
17	76	34	-10.0	-18.9	763	757

Table 17. (Continued)

Day of 1977	Relative Humidity %		Air Temperature °C		Barometric Pressure mm of Mercury	
	Max.	Min.	Max.	Min.	Max.	Min.
18	-	40	-8.9	-20.6*	759	755
19	62	44	-5.6	-15.0	756	754
20	90	40	-2.2	-13.9	759	755
21	90	46	-2.2	-13.9	761	759
22	74	43	-5.0	-10.0	767	760
23	97	44	-2.8	-12.8	769	767
24	99	53	-1.1	-10.6	763	758
25	99	40	2.8	-4.4	755	752
26	64	35	1.1	-5.6	754	747
27	85	25	2.8	-7.2	754	747
28	97	40	3.9	-13.9*	755	743
29	62	37	-5.6	-16.7*	757	754
30	68	35	-3.3	-15.6*	759	756
31	64	34	-3.3	-15.0*	760	756
32	61	43	-2.2	-11.1	766	757
33	98	43	0	-8.9	771	766
34	85	34	6.7	-8.9	766	752

Table 17. (Continued)

Day of 1977	Relative Humidity %		Air Temperature °C		Barometric Pressure mm of Mercury	
	Max.	Min.	Max.	Min.	Max.	Min.
35	98	49	3.9	-5.6	753	747
36	98	40	0.6	-11.1	759	745
37	52	44	-6.1	-12.2	767	760
38	56	41	-3.3	-12.2	772	767
39	98	37	-0.6	-13.9*	772	771
40	98	42	2.8	-	771	765
41	98	41	10.0	-4.4	767	765
42	98	41	10.0	-6.9	767	762
43	98	45	7.2	-5.0	763	753
44	99	36	8.9	0.6	754	749
45	99	34	8.9	-5.6	758	754
46	99	36	2.2	-5.6	764	755
47	68	44	-2.8	-9.4	765	760
48	92	41	-3.3	-12.2	765	763
49	98	44	-1.1	-	766	761
50	99	76	1.1	-2.8	761	756
51	99	45	-	-	756	751

Table 17. (Continued)

Day of 1977	Relative Humidity %		Air Temperature °C		Barometric Pressure mm of Mercury	
	Max.	Min.	Max.	Min.	Max.	Min.
52	65	30	-0.6	-5.6	763	754
53	94	29	13.3	-8.9	763	755
54	94	39	15.6	1.7	763	760
55	98	58	9.4	-4.4	761	747
56	95	14	18.3*	2.2	756	749
57	96	32	13.3	-1.1	760	756
58	98	53	18.9	0	758	752
59	89	29	5.6	-6.1	763	756
60	98	27	8.9	-7.8	764	758
61	84	23	6.7	-6.7	770	765
62	98	31	11.1	-7.8	770	766
63	98	97	9.4	3.3	766	753
64	98	28	17.2*	3.3	761	757
65	95	43	10.0	3.3	767	761
66	99	31	9.4	1.1	766	759
67	97	28	10.6	-4.4	769	766
68	98	39	12.2	-5.0	769	765

Table 17. (Continued)

Day of 1977	Relative Humidity %		Air Temperature °C		Barometric Pressure mm of Mercury	
	Max.	Min.	Max.	Min.	Max.	Min.
69	98	35	15.6	1.1	767	766
70	98	48	17.2	-1.1	770	768
71	98	63	17.2	2.2	770	761
72	99	72	15.6	7.2	760	749
73	98	43	13.3	6.7	759	753
74	98	37	15.6	-0.6	761	755
75	98	23	15.6	4.4	758	753
76	80	23	13.3	4.4	760	756
77	98	35	16.1	6.7	756	737
78	81	32	10.0	0.6	762	747
79	99	50	5.6	2.2	761	755
80	99	41	7.8	-2.8	767	760
81	99	48	7.2	2.8	760	744
82	50	22	8.9	0	758	752
83	66	25	6.1	-2.2	762	757
84	55	24	7.2	-4.4	764	761
85	91	28	11.7	-5.0	767	764

Table 17. (Continued)

Day of 1977	Relative Humidity %		Air Temperature °C		Barometric Pressure mm of Mercury	
	Max.	Min.	Max.	Min.	Max.	Min.
86	99	37	11.1	-5.6	769	764
87	99	76	12.2	5.6	764	757
88	98	39	25.0	7.8	759	757
89	98	43	24.4	13.3	759	753
90	94	27	17.2	3.9	763	751
91	98	38	13.3	0	767	763
92	98	85	16.7	6.7	766	753
93	91	31	-	11.1	762	752
94	99	41	11.1	4.4	763	748
95	99	38	13.3	5.6	755	741
96	82	28	8.9	-1.7	768	754
97	98	28	8.9	-6.7	771	761
98	70	28	10.0	-1.1	770	760
99	98	29	7.8	-5.6	773	769
100	98	26	14.4	-2.8	771	767
101	98	26	22.2	4.4	770	767
102	96	24	30.0	10.0	769	766

Table 17. (Continued)

Day of 1977	Relative Humidity %		Air Temperature °C		Barometric Pressure mm of Mercury	
	Max.	Min.	Max.	Min.	Max.	Min.
103	98	23	29.4	9.4	766	759
104	98	42	24.4	7.2	763	758
105	97	38	16.7	5.6	766	761
106	98	32	20.0	4.4	765	761
107	98	25	20.0*	2.8	765	762
108	99	37	21.1	3.9	766	763
109	98	28	23.9	8.3	767	767
110	98	42	21.1	10.6	770	767
111	98	46	23.3	6.7	772	768
112	98	36	27.8	14.4	768	764
113	90	46	25.6	18.3	764	757
114	98	72	21.7	11.7	758	750
115	98	55	16.7	6.7	754	752
116	98	37	14.4	6.1	757	754
117	97	32	17.8	5.6	759	757
118	98	30	25.6	7.8	760	752
119	98	30	15.0	1.1	767	760

Table 17. (Continued)

Day of 1977	Relative Humidity %		Air Temperature °C		Barometric Pressure mm of Mercury	
	Max.	Min.	Max.	Min.	Max.	Min.
120	98	30	18.3	2.2	768	766
121	98	38	20.6	4.4	769	741
122	99	56	23.9	14.4	767	765
123	99	30	21.1*	10.6	766	763
124	98	73	16.7	10.6	765	759
125	98	52	26.7	15.6	759	753
126	98	38	28.9	13.9	758	755
127	98	86	20.0	13.9	759	756
128	98	27	20.6	6.7	760	750
129	92	36	10.0	3.9	756	752
130	96	34	15.6	5.6	759	756
131	98	31	20.6	5.6	763	760
132	98	25	23.3	3.9	764	759
133	79	33	27.8	15.0	759	754
134	98	26	22.8	10.0	759	755
135	99	32	20.0*	6.1	765	759
136	99	34	23.3	6.7	768	765

Table 17. (Continued)

Day of 1977	Relative Humidity %		Air Temperature °C		Barometric Pressure mm of Mercury	
	Max.	Min.	Max.	Min.	Max.	Min.
137	98	49	26.7	9.4	766	762
138	98	38	31.1	14.4	762	758
139	98	56	26.1	15.6	764	759
140	98	52	24.4	11.7	765	764
141	98	32	26.1	11.7	767	765
142	99	46	25.6	12.8	769	767
143	99	45	25.6	14.4	769	767
144	98	53	23.3	14.4	769	766
145	98	96	21.1	17.8	766	758
146	98	40	25.6*	17.8	759	757
147	98	50	26.1	11.7	759	756
148	98	30	28.9	14.4	756	753
149	98	65	21.7	15.0	762	754
150	97	70	18.3	14.4	764	761
151	98	56	18.9	15.0	764	759
152	98	68	26.1	18.3	759	753
153	98	31	27.8	16.7	757	754

Table 17. (Continued)

Day of 1977	Relative Humidity %		Air Temperature °C		Barometric Pressure mm of Mercury	
	Max.	Min.	Max.	Min.	Max.	Min.
154	98	31	23.3	15.0	764	757
155	98	24	26.7	7.2	766	761
156	99	41	26.7	12.8	761	754
157	99	70	21.1	11.7	754	744
158	98	36	18.9	10.0	754	750
159	98	31	21.1	4.4	757	754
160	98	75	18.9	13.3	756	751
161	94	54	18.9*	11.7	760	754
162	98	35	25.0	11.1	760	755
163	98	32	-	11.1	759	756
164	99	50	24.4	16.7	765	763
165	98	64	21.7	16.7	765	764
166	98	72	23.3	16.7	764	762
167	98	42	27.8	15.6	764	763
168	98	68	25.6	17.8	764	759
169	98	58	27.2	16.7	759	755
170	98	40	30.0	18.9	756	755

Table 17. (Continued)

Day of 1977	Relative Humidity %		Air Temperature °C		Barometric Pressure mm of Mercury	
	Max.	Min.	Max.	Min.	Max.	Min.
171	99	57	26.7	17.8	757	755
172	98	42	24.4	14.4	761	755
173	98	36	23.3	11.7	763	761
174	98	43	25.6	11.7	765	763
175	98	47	24.4	13.9	764	760
176	98	68	24.4	17.8	760	754
177	98	42	29.4	18.3	758	754
178	98	47	28.9	15.6	760	758
179	99	64	29.4	19.4	-	-
180	98	34	32.2	18.9	758	753
181	98	34	30.0	13.9	761	757
182	98	51	30.6	23.3	759	756
183	98	32	28.9	15.6	764	759
184	98	27	27.2	12.2	767	764
185	98	45	31.1	17.8	765	761
186	98	48	33.3	18.9	762	757
187	98	52	31.7	21.1	759	755

Table 17. (Continued)

Day of 1977	Relative Humidity %		Air Temperature °C		Barometric Pressure mm of Mercury	
	Max.	Min.	Max.	Min.	Max.	Min.
188	98	57	30.0	21.7	757	755
189	98	48	33.3	22.2	759	756
190	98	58	30.6	21.1	762	759
191	98	53	30.0	20.0	766	762
192	98	70	27.2	22.2	766	764
193	98	58	32.2	21.7	764	763
194	98	52	32.8	21.7	763	761
195	98	46	30.0	19.4	765	763
196	98	40	31.7	17.2	765	764
197	98	40	33.3	18.9	765	763
198	98	60	33.3	21.7	764	759
199	98	59	31.7	22.2	763	761
200	98	45	33.9	20.6	763	759
201	98	62	31.7	22.8	759	756
202	98	52	35.0	22.2	764	758
203	98	31	30.0	17.8	766	764
204	98	37	27.8	12.8	763	760

Table 17. (Continued)

Day of 1977	Relative Humidity %		Air Temperature °C		Barometric Pressure mm of Mercury	
	Max.	Min.	Max.	Min.	Max.	Min.
205	98	42	30.0	15.0	763	755
206	98	50	25.0	21.1	764	757
207	99	36	26.7	14.4	766	764
208	98	36	24.4	12.8	-	-
209	98	33	26.7	10.6	-	-
210	98	40	27.8	15.0	-	-
211	98	64	26.7	18.9	-	-
212	99	54	30.0	17.2	-	-
213	98	69	30.0	19.4	-	-
214	98	41	29.4	17.2	763	759
215	98	54	30.0	21.1	763	761
216	98	54	30.0	18.9	765	763
217	98	42	34.4	20.6	765	763
218	98	42	33.9	21.7	763	761
219	99	42	34.4	22.2	761	759
220	99	43	33.9	21.1	761	757
221	98	50	32.2	20.6	761	759

Table 17. (Continued)

Day of 1977	Relative Humidity %		Air Temperature °C		Barometric Pressure mm of Mercury	
	Max.	Min.	Max.	Min.	Max.	Min.
222	98	61	32.2	22.8	761	759
223	98	48	32.8	22.2	763	760
224	98	55	31.1	22.2	762	761
225	98	66	28.3	21.7	762	761
226	98	68	28.9	21.7	762	759
227	98	55	29.4	20.6	765	762
228	99	60	30.0	21.1	765	758
229	98	58	31.7	21.1	759	755
230	98	38	26.7	13.3	762	752
231	98	36	25.6	11.7	763	761
232	98	37	26.1	13.9	762	760
233	98	57	25.6	12.2	763	759
234	98	50	30.0	20.8	759	756
235	99	40	27.8	17.8	760	758
236	98	65	27.8	18.3	760	757
237	98	36	23.3	10.6	767	759
238	98	38	25.6	8.9	768	767

Table 17. (Continued)

Day of 1977	Relative Humidity %		Air Temperature °C		Barometric Pressure mm of Mercury	
	Max.	Min.	Max.	Min.	Max.	Min.
239	98	65	27.8	16.7	768	766
240	98	60	30.6	18.9	769	767
241	98	56	31.1	20.0	767	764
242	99	50	32.2	20.0	765	763
243	98	48	31.7	18.9	766	764
244	98	59	31.1	20.0	767	765
245	98	44	33.9	21.1	766	762
246	98	52	30.6	19.4	763	761
247	98	48	28.9	18.9	764	760
248	98	62	27.8	20.0	744	758
249	99	54	31.1	18.9	761	759
250	99	56	26.1	19.4	763	761
251	98	54	24.4	18.3	765	762
252	98	96	20.6	17.8	764	758
253	98	51	28.9	15.6	759	756
254	98	33	24.4	10.6	765	759
255	99	36	21.1	6.7	768	765

Table 17. (Continued)

Day of 1977	Relative Humidity %		Air Temperature °C		Barometric Pressure mm of Mercury	
	Max.	Min.	Max.	Min.	Max.	Min.
256	75	48	27.8	14.4	765	758
257	98	54	26.7	16.1	764	756
258	98	48	19.4	11.7	771	764
259	98	77	23.3	17.8	771	765
260	98	54	28.3	20.6	765	761
261	99	46	30.6	17.8	761	757
262	98	45	31.7	18.9	757	754
263	99	44	30.0	18.3	758	755
264	98	72	20.6	15.6	763	758
265	98	69	21.1	15.0	765	763
266	98	62	22.8	13.9	764	762
267	98	56	26.7	15.6	762	758
268	99	74	22.8	17.8	760	758
269	99	59	26.1	17.8	760	753
270	99	36	26.7	11.7	755	753
271	98	43	21.1	10.6	758	754
272	98	29	21.1	6.1	761	758

Table 17. (Continued)

Day of 1977	Relative Humidity %		Air Temperature °C		Barometric Pressure mm of Mercury	
	Max.	Min.	Max.	Min.	Max.	Min.
273	98	44	22.8	6.1	762	759
274	98	74	21.1	15.0	760	752
275	99	49	25.0	11.7	757	752
276	86	36	15.6	6.1	760	757
277	94	36	18.3	6.1	765	760
278	98	32	20.0	4.4	767	764
279	98	70	15.6	5.6	766	763
280	98	33	16.7	2.2	769	766
281	98	56	13.9	6.7	768	760
282	100	50	18.9	8.3	760	752
283	99	42	15.6	4.4	764	758
284	99	50	16.7	1.7	765	760
285	98	35	14.4	7.8	765	759
286	72	55	9.4	6.7	765	762
287	98	67	8.9	4.4	762	753
288	98	36	16.7	5.0	759	753
289	99	64	13.9	2.2	757	747

Table 17. (Continued)

Day of 1977	Relative Humidity %		Air Temperature °C		Barometric Pressure mm of Mercury	
	Max.	Min.	Max.	Min.	Max.	Min.
290	99	40	9.4	-2.2	759	749
291	98	30	15.0	-2.8	759	755
292	97	42	14.4	4.4	757	754
293	98	43	14.4	3.9	764	760
294	98	38	16.7	2.8	768	764
295	98	32	21.7	2.2	767	764
296	98	35	13.9	6.7	773	767
297	98	34	13.9	2.8	775	772
298	98	50	16.7	1.7	772	766
299	98	96	16.1	9.4	766	756
300	98	98	16.7	14.4	759	756
301	98	62	18.9	12.2	763	757
302	99	46	15.6	3.9	765	762
303	99	34	15.0	2.2	769	765
304	100	49	13.3	1.1	772	769
305	99	70	15.0	6.1	770	768
306	98	79	17.8	12.2	768	766

Table 17. (Continued)

Day of 1977	Relative Humidity %		Air Temperature °C		Barometric Pressure mm of Mercury	
	Max.	Min.	Max.	Min.	Max.	Min.
307	98	98	16.1	15.0	766	765
308	98	70	22.8	15.6	767	765
309	99	84	19.4	15.0	768	767
310	100	99	15.0	13.3	767	758
311	100	100	15.6	13.3	758	756
312	100	99	15.6	13.3	761	756
313	99	90	15.6	11.1	763	760
314	99	62	16.7	5.6	760	750
315	98	38	-	-2.8	764	756
316	98	38	5.6	-4.4	763	763
317	73	43	2.8	-3.3	769	765
318	99	48	6.1	-7.2	771	767
319	96	42	12.8	-0.6	766	761
320	98	34	18.9	4.4	761	756
321	98	48	19.4	5.6	761	749
322	78	32	12.2	1.7	765	756
323	99	42	10.0	-1.7	772	765

Table 17. (Continued)

Day of 1977	Relative Humidity %		Air Temperature °C		Barometric Pressure mm of Mercury	
	Max.	Min.	Max.	Min.	Max.	Min.
324	98	35	10.0	-1.1	774	772
325	98	87	12.8	7.2	772	766
326	99	85	13.3	5.0	-	-
327	99	99	6.7	5.0	-	-
328	99	98	8.3	0.6	-	-
329	98	98	4.4	-0.6	769	762
330	98	41	4.4	-2.2	763	760
331	98	35	2.2	-3.9	763	748
332	99	49	7.8	-1.7	774	747
333	99	64	2.2	-1.7	776	772
334	98	98	7.8	1.7	771	755
335	98	93	13.3	6.1	775	750
336	98	38	11.1	2.2	759	755
337	98	34	12.2	-1.1	759	753
338	100	48	7.8	1.7	762	757
339	100	61	10.0	2.8	762	743
340	99	44	4.4	0	752	745

Table 17. (Continued)

Day of 1977	Relative Humidity %		Air Temperature °C		Barometric Pressure mm of Mercury	
	Max.	Min.	Max.	Min.	Max.	Min.
341	52	36	0	-5.6	767	752
342	73	42	1.1	-7.2	772	763
343	98	33	6.7	-5.6	766	755
344	54	38	-1.7	-8.9	774	766
345	96	39	-1.1	-11.1	776	774
346	99	40	1.7	-11.7	775	768
347	98	42	6.1	-2.2	768	766
348	98	92	12.2	-2.2	766	754
349	98	49	11.7	-1.7	764	753
350	98	54	7.8	-3.3	766	763
351	98	79	5.0	-2.8	764	760
352	99	99	5.6	3.3	759	754
353	99	82	4.4	2.2	763	754
354	99	85	6.1	2.2	764	757
355	98	60	7.8	-0.6	757	751
356	98	42	4.4	-4.4	767	756
357	98	42	6.7	-3.9	767	761

Table 17. (Continued)

Day of 1977	Relative Humidity %		Air Temperature °C		Barometric Pressure mm of Mercury	
	Max.	Min.	Max.	Min.	Max.	Min.
358	98	54	10.0	-2.2	765	755
359	99	41	10.0	-2.8	755	749
360	73	33	-2.8	-11.1	763	755
361	98	36	-0.6	-13.3	767	764
362	98	40	-3.3	-12.2	769	767
363	98	33	2.8	-11.7	769	767
364	98	42	5.0	-5.6	769	765
365	98	52	5.0	-2.2	765	764

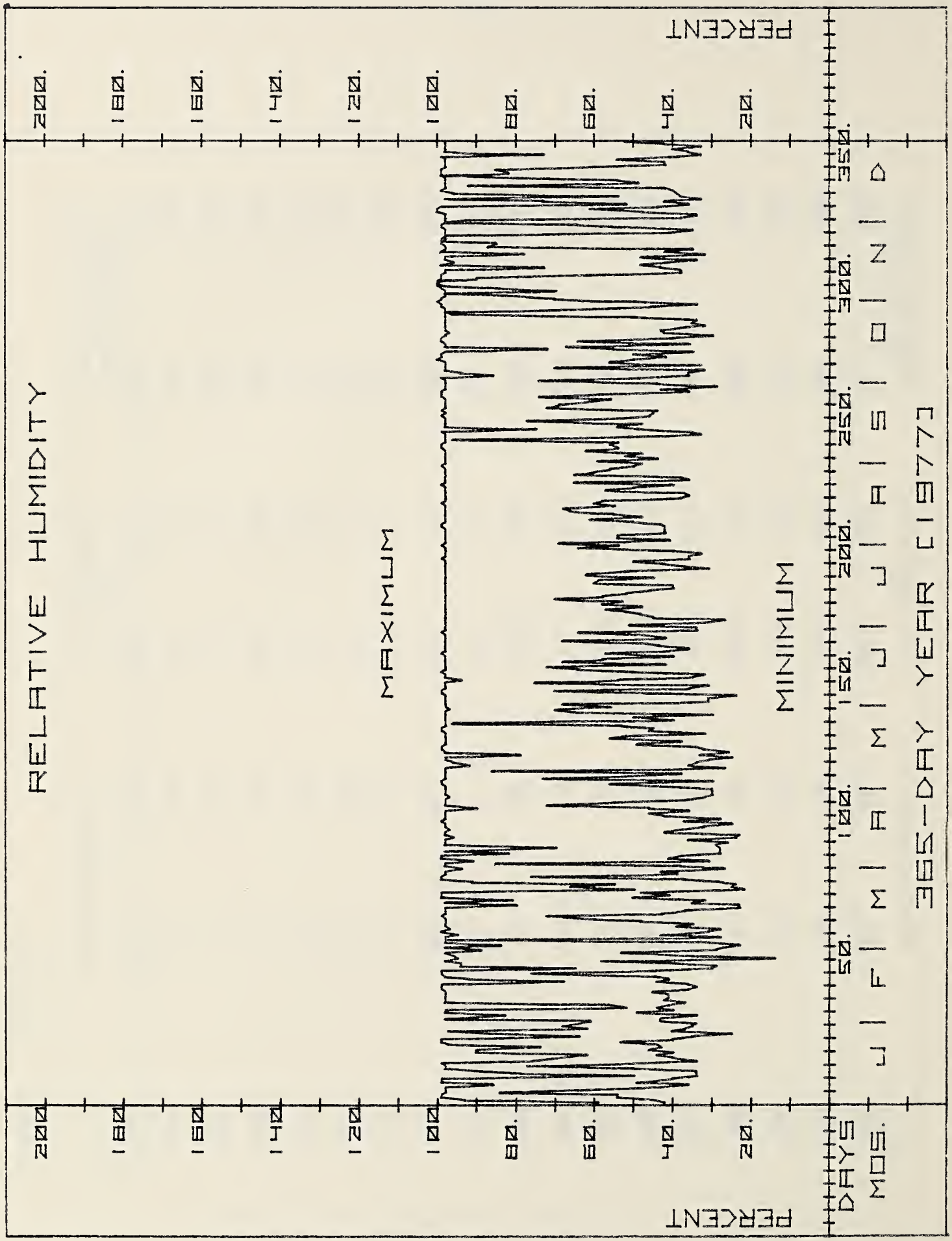


Figure 14. Relative humidity

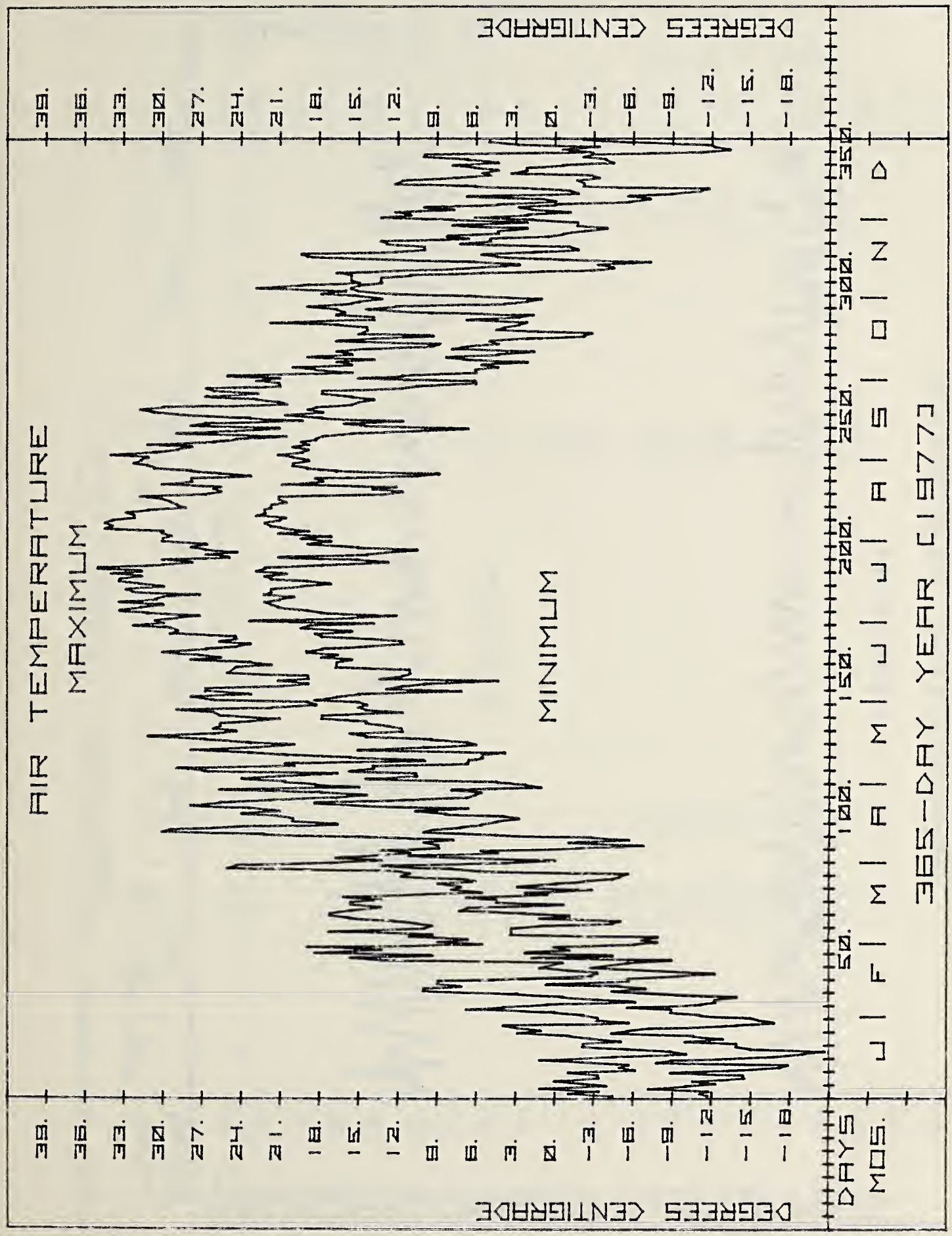


Figure 15. Air temperature

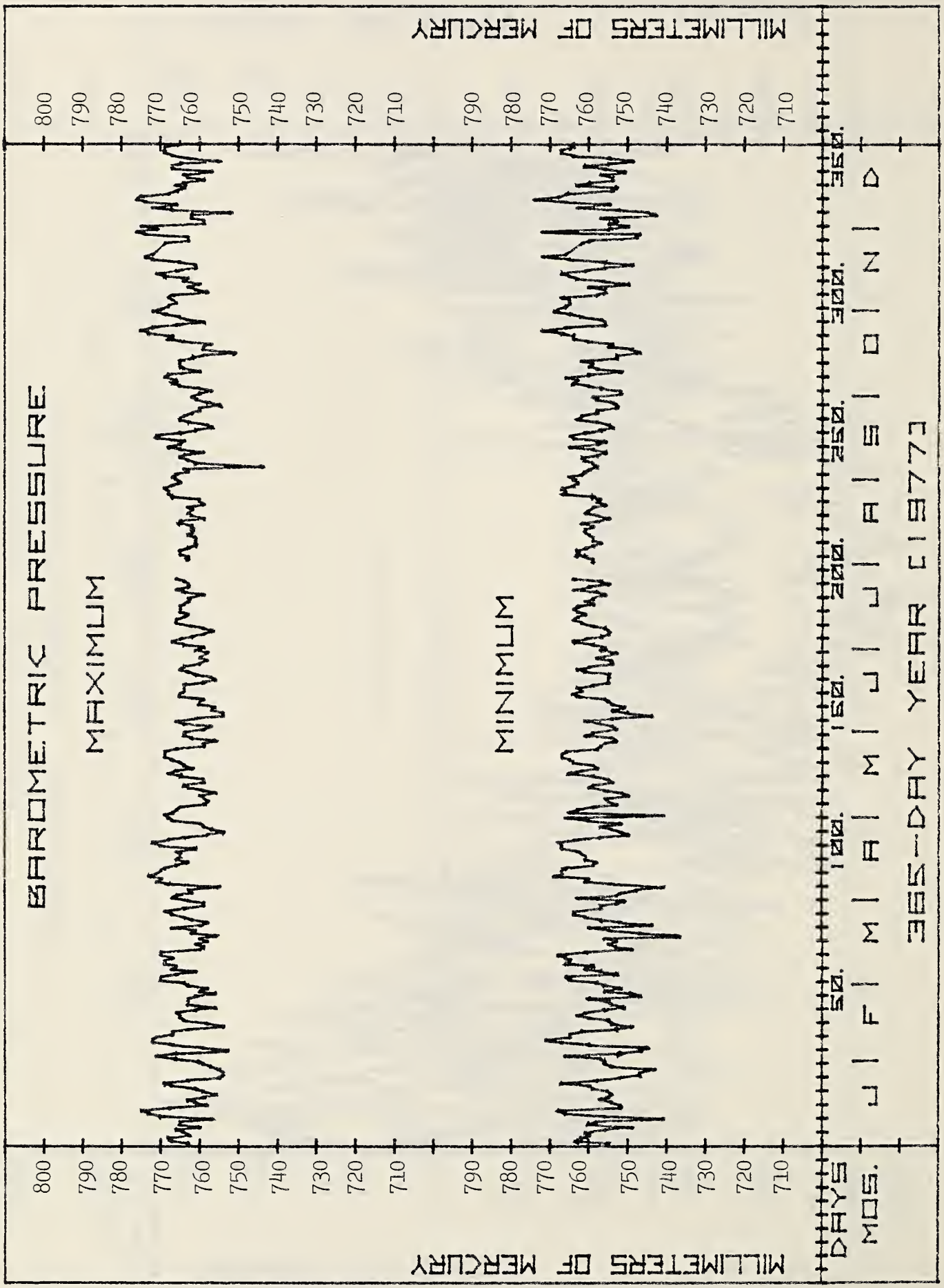


Figure 16. Barometric pressure

Table 18. Daily Rainfall - Data from rain gauge network (Figure 11).

A. Manual gauges (cm)

Julian date	Station number															
	5	8	9	10	11	12	13	14	15	16	18	19	20	21	22	23
(1977)																
005															0.15	
006				0.18												
007				0.40											0.94	
010				1.30											1.70	
015				1.78											1.78	
016															0.28	
017				0.18												
025				0.64											0.10	
044				0.05						0.15			0.13			
051																
055										0.79			0.20			
056				1.02						0.10						
058										0.05			0.97			
059				0.08												
063				0.10	0.13					0.15			1.60			
064				0.03	0.08					0.05					0.28	
072				0.18	0.25					0.91			0.64			
073				0.76	0.84					0.25					0.61	
077				0.05	0.25					0.53			0.56			
078				0.81	0.79											
079				0.30	0.30					0.28			0.30			
080				0.05	0.13										1.04	
081				0.18						3.18			3.38		3.38	
082				2.92	2.97											
087										0.20			0.23			
088				0.15	0.20											

Table 18. (Continued)

A. Manual gauges (cm)

Julian date	Station number 5	8	9	10	11	12	13	14	15	16	18	19	20	21	22	23
092										1.80			1.73			
093				1.88	1.88					0.05					2.34	
094				0.05	0.30					0.53			0.53			
095				1.17	1.09					1.37			1.30		1.14	
096				0.56	0.58										0.24	
114													1.07			
115				0.91	0.97					0.89					1.32	
116				0.91	0.76					0.81			0.86			
119				0.51	0.51					0.38						
120															1.34	
122										0.28						
123				0.41	0.33											
124				0.13	0.48					0.46						
125				1.02	0.74					2.08					1.52	
126				0.18									3.56			
127				1.68	1.75					2.44			2.08			
128				0.28						0.03						
129															1.55	
134				0.10	0.30					0.18						
135															0.13	
139				0.48	0.43					0.89						
140				0.76												
145				0.76	0.84					0.84			0.97			
146				0.48	0.30											
157				0.36	0.36					1.52			1.83		0.76	
158				1.50	1.40					0.03						
160		2.10	2.00	0.56	1.27	2.00		2.00			2.00	2.10	3.06		2.79	
161			0.10	1.57	0.81					1.96			0.05		0.08	

Table 18. (Continued)

A. Manual gauges (cm)

Julian date	Station number 5	8	9	10	11	12	13	14	15	16	18	19	20	21	22	23
165			0.02													
166	0.10								0.04	0.03						
168														4.82		
169	5.20	5.10	4.22	3.18	2.76	3.04	3.53		5.29	5.59	6.38	5.48	5.11		4.39	
170	0.02	0.10	0.06	0.08	0.05	0.04	0.04	4.30	0.12	0.03	0.08	0.02	0.18	0.30	0.25	
171	0.72	0.90	0.06	0.05	0.04	1.50	1.02	0.92	0.82	0.64	0.80	0.09		0.88		
172	0.04	0.10	1.44	1.83	1.73			0.12	0.04	0.05	0.03	0.50			0.94	
176	0.03	0.10	0.04			0.04					0.04	0.08		0.06		
178						0.08										
179	0.11	0.20	0.28	0.13	0.06			0.14	0.04	0.13	0.10	0.08	0.38	0.60	0.64	
180				0.13								0.05				
181					0.02				0.02							
182	0.14		0.06			0.10	0.48	0.24	0.32	0.10	0.33	0.17	0.48	0.36		
183		0.03		0.13	0.12											
188	0.32	0.02	0.40			0.50	0.40	0.22	0.30	0.30	0.22	0.15	0.28	0.01	0.36	
189				0.99	1.06											
190	0.14	0.02	0.26			0.26	0.26	0.20		0.15	0.15	0.14		0.20	0.13	
191				0.33	0.36											
192	1.43	1.50	1.70		0.82	1.04	0.96	1.12	1.48	1.64	1.90	1.78	2.34	2.82	3.05	
193	1.57			1.37			1.56					0.02	1.73	1.54	1.57	
194			1.30	1.78	2.10	1.70	0.18	1.48	1.42	1.93	1.20	1.73				
195														0.20	0.05	
198	2.35												1.46			
199		1.50	1.36	1.42	1.26	1.36	1.42	2.04	2.34	2.74	2.40	2.49	0.17	1.22	0.94	
200												0.04				
201	0.20	0.20	0.14			0.15		0.02	0.20	0.23	0.20	0.23			0.05	
202	0.03			0.10	0.10									0.20		
203			0.20	0.56	0.40		0.26	0.08		0.05	0.10	0.06		0.31		
205												0.58				

Table 18. (Continued)

A. Manual gauges (cm)

Julian date	Station number 5	8	9	10	11	12	13	14	15	16	18	19	20	21	22	23
206	0.52		0.06				0.34	0.16	0.58	0.10					0.69	
207			0.24	0.28	0.28	0.35		0.46		0.46	0.50			0.30		
208		0.20														
211	0.92		0.84	0.81	0.68	0.86	1.08	0.94	0.94	1.04	0.98	0.93		1.16	1.45	
212			0.02													
213	1.18					0.62	0.72	0.94	0.92	1.14	0.76	1.18		1.08	1.34	
214			0.70	0.76	0.54			0.04				0.03		1.12		
215									0.04							
216			0.02													
217	0.26					0.10		0.32	0.02		0.14	0.52		0.06		
218			0.08	0.05	0.06					0.43						
219										0.03						
220	0.12		0.06	0.03	0.05	0.06		0.12	0.40						0.51	
221	0.86	1.00	0.81	0.97	0.62	0.72	0.70	0.98	0.34	0.13	0.57	1.08		0.76		
222	0.76		0.08		0.12	0.26	0.50	0.62	0.36	1.37	0.22	0.50		0.38		
223	0.26		0.18	0.30	0.26	0.26		0.28	0.38	0.25	0.21	0.12		0.10		
224	0.23	0.55						0.06		0.18				0.02		
225	0.18	0.10	0.10	0.10	0.08	0.14	0.49	0.18			0.11	0.15		0.26	0.64	
226	0.24		0.62	0.56	0.42	0.22	0.30	0.30	0.56		0.40	0.26				
227			0.04	0.15	0.14					0.43		0.02				
232		0.20														
236	1.93		2.42	0.03		2.24	1.92	1.84	1.94	1.88	2.63	1.95	2.88	3.12	3.38	
237		0.63	0.18	2.79	0.28			0.02								
246					0.05		0.08									
247					0.32											
248	0.24		0.02			0.36	0.42	0.40	0.32	0.20		0.24		0.14		0.25
249		0.55	0.01	0.31			0.04	0.02	0.58				0.04	0.04	0.51	
250		1.18	0.02	0.03		0.08	0.38	1.26	0.22	0.64			0.03	0.50		0.61

No Data

Table 18. (Continued)

A. Manual gauges (cm)

Julian date	Station number 5	8	9	10	11	12	13	14	15	16	18	19	20	21	22	23
252			0.48				0.48	0.40	0.38	0.36		0.35	0.05	0.44		0.42
253			0.01	0.56	0.56	0.48		0.08	0.12			0.03			1.68	0.13
255																0.32
256									0.04							
257							0.06	0.04		0.10		0.02		0.14		0.13
259						0.50									0.51	
260			0.48	0.48	0.42		0.42	0.36	0.46	0.38		0.43	0.05	0.50		0.52
262								0.02								
265								0.02				0.05				
267												0.01				
269			0.14			0.12	0.20	0.20		0.15		0.13		0.18		0.10
270			0.04	0.10	0.18		0.02	0.02				0.01				
271								0.04	0.16	0.05		0.06		0.02		
274						0.02			0.06	0.03		0.04				
275			0.08			0.08							0.06			0.04
276	No Data	No Data		0.10	0.12						No Data					
279			0.06					0.08		0.03		0.08				0.10
280					0.06				0.04							
281			0.06						0.12	0.05		0.06		0.14		
282			3.93	2.03	1.70	3.58	2.74	3.66	3.70	3.94		4.74	4.16	3.54	3.96	
283				1.91	2.30											4.80
287			2.42	0.25	0.30	5.05	3.96	3.76	4.62	3.73		3.28	3.38	4.24	4.67	3.05
288			2.50	4.83	4.82		1.30	1.26	0.56	1.22		1.64	1.31			1.01
289								0.04								
290		0.50	1.20	1.27	1.24	1.26	1.20	1.38	1.10	0.99		1.04	0.98	1.18	1.42	
291				0.10	0.03											
292		0.40	0.03					0.04				0.04				
294		1.30														
298		0.20											0.24			

Table 18. (Continued)

A. Manual gauges (cm)

Julian date	Station number 5	8	9	10	11	12	13	14	15	16	18	19	20	21	22	23
299		0.53	1.86	0.13	0.12	2.54	2.50	2.34	2.04	2.18		1.94	2.92	1.86		1.84
300		5.00	3.06	5.33	5.90	2.98	3.20	3.02	3.10	3.28		2.94	0.82		3.53	1.00
301		1.30		0.13	0.20	0.10		0.02	0.64	0.05		0.08		2.06		
302		0.40														
305		0.14	0.04					0.04				0.02				
306						0.04	0.10						2.08			
307			1.04		0.02	1.02	0.60	0.96	0.72	0.69		0.52	1.24	0.40		
308			0.26	1.17	1.32	0.22	0.88	0.24	0.28	0.28		0.25			0.69	0.72
309			0.08	0.10	0.12			0.18	0.04	0.64		0.04		0.18		0.42
310			0.16	0.33		4.04	1.00	1.02		0.64		0.20	2.14	3.58		
311		1.10	3.65	3.30	2.54		3.14	2.80	3.82	3.18		3.58	1.82	0.50	3.38	
312			0.28	0.71	2.24	0.20		0.26		0.33		0.30		0.18		0.43
313				0.08				0.02					3.32			
314		1.43					0.02									
315	No Data		1.10	1.32	1.12	1.15		1.22			No Data	1.13			1.32	1.13
316								0.02	1.42							
317		0.50														
321		0.53	1.22	1.17	0.98	1.66	3.20	1.62	1.64	2.82		1.75	1.88			1.54
322		0.08	0.66	0.76	0.78		0.60			0.03		0.08				0.42
323			0.04					0.06							1.78	
324								0.02					0.36			
325						0.02		0.06				0.02	0.52	1.86		
326		0.02	0.90	0.50	0.56	0.92		2.40	2.28	0.87		0.83		0.94		0.94
327		0.26	1.46	1.98	1.58	1.32	0.80	0.04		1.60		1.58	1.42	1.30	2.34	
328		0.12	0.16	0.08	0.54	0.18	1.20	0.14		0.10			0.44			1.04
329		2.00	0.74	0.13	0.62	0.86	1.12	1.24	2.38	0.97		1.68		2.22		0.94
330				2.13	1.52	1.32		1.28		1.24		0.80			2.34	1.20
331			1.30					0.04								0.02

Table 18. (Continued)

A. Manual gauges (cm)

Julian date	Station number 5	8	9	10	11	12	13	14	15	16	18	19	20	21	22	23
332			0.16	0.08				0.04				0.10		0.02		
333			0.64		0.40	0.68	1.56	0.70	0.78	0.79		0.68	0.62	0.66		0.63
334			0.46	0.56	0.30	0.52	1.42	0.48	0.72	0.43		2.30	0.48	0.74	1.27	3.01
335		0.01	1.92	2.29	2.34	1.92	1.12	1.78	1.64	1.88	1.98	0.27	2.12		1.96	
336		0.01						0.04			0.01	0.04			0.03	
338						0.02										
339		0.01	0.60	0.05	0.04	0.56	0.66	0.64	0.68	0.64	0.66	0.66	0.82	2.54		
340			0.18	0.66	0.56	0.16		0.18	0.20	0.15	0.16	0.20			0.89	
341				0.66	0.10											
342													0.34			
343			0.30	0.13	0.26	0.26				0.25	0.28	0.30				
344				0.18												
346	No Data							0.02								
347			0.02					0.02								No Data
348		0.04	0.82			0.62	1.60	0.82	1.54	0.81	0.80	0.84		2.30		
349		0.02	1.02	1.83	1.64	1.04		1.08	0.64	1.14	1.16	1.20				
352		1.20	6.44	5.08	4.92	5.36	6.40	7.80	6.42		6.46	6.90	5.16	7.54	4.27	
353		0.06	2.62	3.43	4.04	2.70	2.84	1.18	2.76	6.32	2.66	2.46	2.04		3.43	
354		0.84	0.38	0.13		0.60		0.64	0.64	2.67	0.50	1.30	1.64	0.50	2.24	
355		0.02	1.10	1.27	1.32	0.90	2.80	0.96	0.98	0.64	0.96	0.92	0.82		0.56	
356			0.03	0.30	0.14		0.32	0.06		0.94					0.89	
358								0.04								
359			0.40	0.38	0.34			0.04	0.38	0.38	0.37	0.42		0.60		
361		0.09														
364			0.18			0.56		0.50	0.14	0.36	0.35	0.29	0.01			
365			0.68	0.86	0.80		0.88	0.40		0.51	0.54	0.66			1.27	

Table 18. (Continued)

B. Recording gauges (cm)

Julian date	Station number 1	2	Julian date	Station number 1	2
7	0.33		188	0.23	0.15
10	1.50		190	0.15	0.25
14		1.24	192	2.13	2.69
15		0.20	193	1.09	1.02
25		0.10	194	0.05	0.18
43		0.08	198	1.78	1.27
55		1.07	201	0.15	0.13
58		0.08	202	0.05	0.03
63		0.13	206	0.38	0.30
66		0.08	207		0.03
72	0.76	0.66	211	0.94	0.76
77	0.51	0.81	213	0.66	0.81
79	0.18	0.33	217	0.20	0.03
81		3.30	219	0.03	0.03
87		0.20	220	0.71	0.71
91	0.03		222	0.33	0.18
92	2.03	1.98	223	0.03	
93	0.03	0.03	224	0.03	0.07
94	0.81	0.76	225	0.25	0.30
95	1.04	1.14	226	0.23	0.08
114	1.04	0.25	236	1.85	2.64
115	0.99	0.05	248	0.25	0.20
118	0.41		249	1.01	0.40
122	0.13		252	0.41	0.56
124	1.02	0.76	253		0.03
125	0.03	0.15	259	0.48	0.41
126	1.40	1.45	260	0.08	0.05
127	0.36	0.28	269		0.07
134	0.18	0.08	275	0.03	0.08
138	0.33	0.28	279	0.05	0.05
139	0.23	0.13	281	0.36	0.38
144	0.05	0.08	282	3.84	3.78
145	0.91	1.07	287	4.72	5.11
156	0.25	0.28	288	0.05	0.05
157	1.24	1.42	289	0.86	0.94
160	2.11	2.06	290	0.15	0.17
168	6.27	4.70	299	4.47	4.60
169	0.08	0.18	300	0.28	0.43
171	1.07	1.32	301		0.03
172	0.03		307	0.74	0.79
176	0.03		308	0.05	0.03
179	0.18	0.43	309	0.05	0.05
182		0.15	310	3.38	3.33

Table 18. (Continued)

B. Recording gauges (cm)

Julian date	Station number 1	2
311	0.74	0.58
312	0.03	0.33
314	1.04	1.27
320		0.15
321		1.73
325		0.02
326	1.47	1.63
327	0.84	0.84
328	0.10	0.08
329	1.98	2.11
330	0.08	0.08
333	0.64	0.66
334	0.81	2.29
335		0.25
339	Missing data	0.73
340		0.13
343		0.25
347		0.03
348		1.88
349	1.78	
351		0.13
352		7.39
353	8.00	0.03
354	1.24	0.51
355	0.58	0.88
359	0.30	0.33
364	0.61	0.30
365	0.13	0.03

Table 18. (Continued)

B. Recording gauges (cm)

Julian date	Station number 3	4	5	6
(1977)				
179		0.03		
182	0.03	0.13		
188	0.30		0.28	
190	0.03		0.13	
192			1.44	
193	0.05		1.47	
194	0.27	0.07	0.05	
198	1.49	1.63	2.11	
199	0.05	0.02		
201	0.10	0.18	0.10	
202	0.43	0.05		
206	0.33	0.45	0.48	0.55
211	0.79	1.07	0.89	0.56
213	0.55	0.73	1.16	1.09
214			0.03	
217	0.05	0.18	0.23	0.30
219	0.03	0.03	0.10	0.08
220	0.92	0.71	0.83	0.22
221		0.03		
222	0.43	0.51	0.91	0.51
223	0.03			
224	0.08	0.05		
225	0.18	0.15	0.15	0.15
226	0.18	0.33	0.18	0.18
236	2.26			1.91
238				0.03
241		0.03		
244			0.03	0.18
245	0.03	0.05		
248	0.20	0.38	0.25	
249		0.69	0.68	
252	0.48	0.41	0.41	
253	0.03			
257		0.05	0.03	0.03
259	0.20	0.41	0.28	0.38
260	0.05	0.05	0.05	0.03
269		0.08		
270		0.02	0.02	
274			0.03	0.03
275				0.08
279		0.03	0.05	0.03

Table 18. (Continued)

B. Recording gauges (cm)

Julian date	Station number 3	4	5	6
(1977)				
280		0.03		
281		0.30	0.30	0.33
282		3.58	3.68	3.66
287	5.66	5.31	5.16	3.99
288	0.08	0.05	0.05	0.05
289	1.14	1.04	0.91	0.81
290	0.20	0.22	0.20	0.15
298		0.03		
299	5.92	4.98	5.13	
300	0.43	0.41	0.43	
301	0.03	0.03	0.03	
302		0.13		
306	0.03		0.03	
307	0.08	1.09	1.02	0.69
309		0.18	0.05	
310	3.00	3.33	3.25	3.07
311		0.68	0.73	
312		0.03	0.03	
314		1.45	1.27	1.16
320	1.76	1.75	1.62	1.17
325			0.02	
326	1.62	1.55	1.50	1.40
327	0.76	0.84	0.97	0.89
328	0.10	0.10	0.08	0.10
329	2.34	2.26	2.26	2.08
330	0.08	0.08	0.08	
332	0.05	0.02	0.03	
333	0.63	0.69	0.69	0.64
334	2.36	2.25	2.29	2.24
335	0.18	0.18	0.15	0.20
339		0.58	0.66	0.64
340	0.18	0.15	0.15	0.13
343	0.25	0.25	0.25	0.23
347		0.03		
348	1.75	1.85	2.01	0.03
351	0.05	0.05	0.10	
352	5.94	7.70	8.00	3.00
353		1.09	1.11	
354	0.69	0.69	0.71	0.64
355	0.86	0.88	0.91	0.89
359	0.33	0.36	0.36	0.33
364	0.74	0.64	0.61	0.66
365	0.18	0.20	0.25	0.20

Table 19. Weather Station Data (Evaporation)

Day of 1977	Evaporation Cm	Day of 1977	Evaporation Cm	Day of 1977	Evaporation Cm
076	0.31	099	-	122	1.37
077	0.08	100	-	123	0.38
078	-	101	1.11	124	0.25
079	-	102	0.56	125	-
080	0.79	103	0.70	126	0.71
081	-	104	0.52	127	-
082	-	105	0.50	128	-
083	0.40	106	-	129	-
084	0.38	107	-	130	1.65
085	-	108	1.48	131	0.34
086	-	109	0.14	132	0.22
087	0.76	110	0.41	133	0.66
088	0.29	111	0.46	134	-
089	0.49	112	0.55	135	-
090	0.80	113	-	136	1.80
091	-	114	-	137	0.47
092	-	115	1.30	138	0.57
093	-	116	0.41	139	-
094	-	117	0.35	140	0.97
095	0.97	118	0.81	141	-
096	0.43	119	-	142	-
097	0.32	120	-	143	1.75
098	0.49	121	-	144	0.35

Table 19. (Continued)

Day of 1977	Evaporation Cm	Day of 1977	Evaporation Cm	Day of 1977	Evaporation 1977
145	0.08	168	0.52	191	-
146	0.43	169	-	192	-
147	0.59	170	-	193	1.27
148	-	171	-	194	-
149	-	172	0.36	195	0.66
150	-	173	0.59	196	0.72
151	1.73	174	0.51	197	-
152	-	175	0.52	198	-
153	0.49	176	-	199	2.29
154	0.65	177	-	200	0.64
155	-	178	1.40	201	0.50
156	-	179	0.56	202	0.51
157	0.91	180	0.55	203	0.39
158	0.53	181	0.62	204	-
159	-	182	-	205	-
160	-	183	-	206	1.83
161	-	184	-	207	0.41
162	-	185	-	208	0.73
163	-	186	3.07	209	0.64
164	1.75	187	0.65	210	0.64
165	0.24	188	0.56	211	-
166	0.02	189	0.44	212	-
167	0.39	190	-	213	-

Table 19. (Continued)

Day of 1977	Evaporation Cm	Day of 1977	Evaporation Cm	Day of 1977	Evaporation Cm
214	1.75	237	0.40	260	-
215	0.34	238	-	261	-
216	0.44	239	-	262	1.14
217	0.58	240	-	263	-
218	-	241	2.12	264	0.72
219	-	242	0.47	265	0.11
220	1.85	243	0.51	266	0.19
221	0.84	244	0.12	267	-
222	0.43	245	0.81	268	-
223	0.58	246	-	269	0.56
224	0.49	247	-	270	0.28
225	-	248	-	271	0.43
226	-	249	1.37	272	0.43
227	0.97	250	0.41	273	0.35
228	0.45	251	0.35	274	-
229	0.47	252	0.61	275	-
230	0.41	253	-	276	0.89
231	0.45	254	-	277	0.32
232	-	255	1.19	278	0.24
233	-	256	0.43	279	0.02
234	1.17	257	0.43	280	0.25
235	0.17	258	0.28	281	-
236	0.71	259	0.12	282	-

Table 19. (Continued)

Day of 1977	Evaporation Cm	Day of 1977	Evaporation Cm
283		306	0.15
284		307	-
285		308	-
286		309	-
287	No Data	310	-
288		311	-
289		312	-
290		313	0.03
291		314	0.05
292	0.20	315	0.43
293	0.24	316	-
294	0.20	317	-
295	-	318	0.31
296	-	319	0.09
297	-	320	0.23
298	0.90	321	-
299	-	322	0.56
300	-		
301	-		
302	-		
303	-		
304	0.74		
305	-		

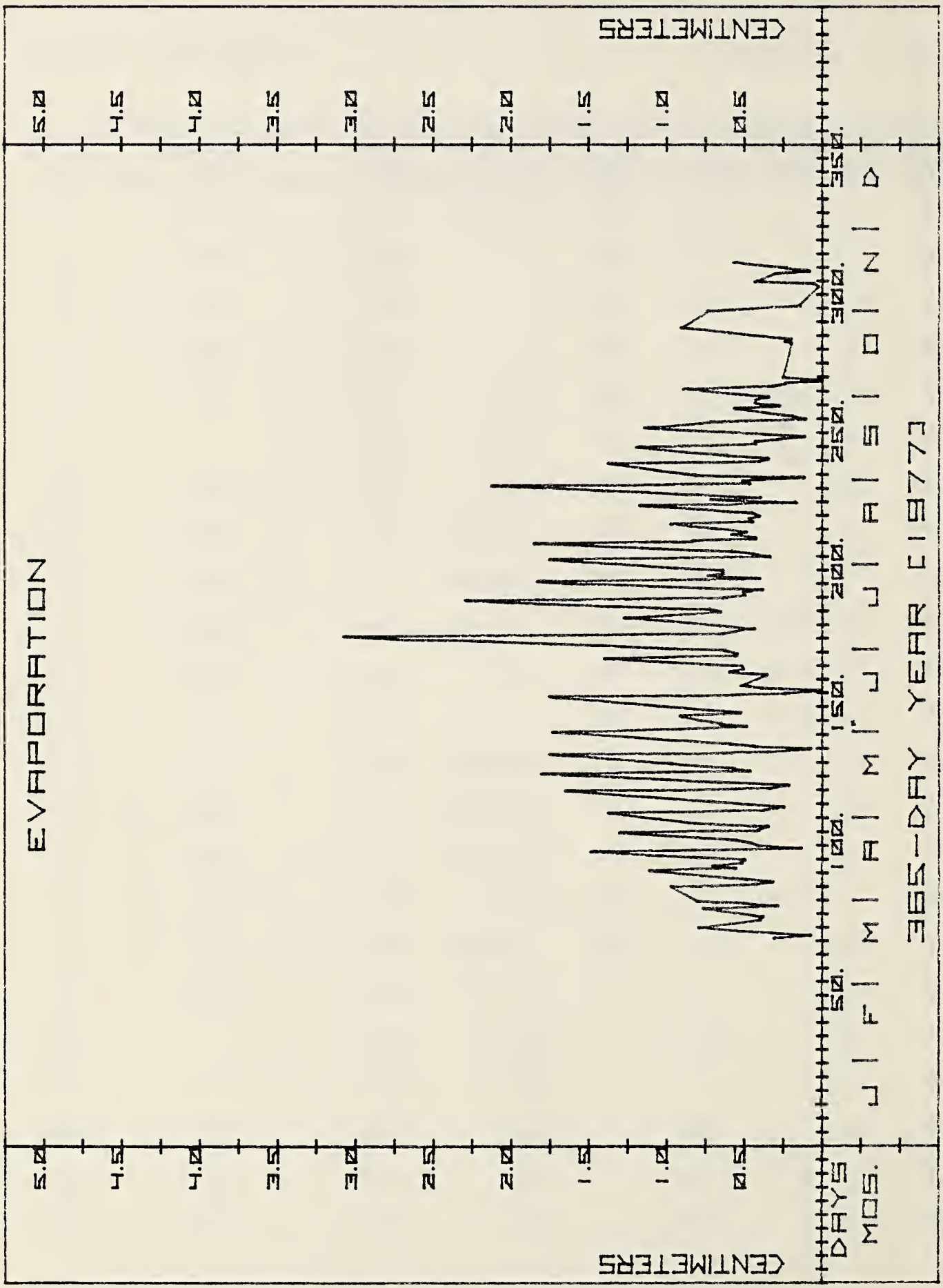


Figure 17. Evaporation

Water Quality Monitoring Data at CBCES Dock

Parameters - Temperature (^{o} C)
pH
Dissolved oxygen (ppm)
Turbidity (Jackson units)
Salinity (ppt)
Tide height (ft)

Technique - All parameters except tide height were taken at a depth of 1 meter as described in U.S. Geological Survey, Water Resources Investigation Publication 10-74.

Principal Investigator: Robert Cory, U.S. Geological Survey, Chesapeake Bay Center for Environmental Studies.

Research Funding: U.S. Geological Survey.

Table 20. Water quality monitoring data at C[illegible]ES dock.

		DATE	TEMPERATURE DEG C		PH		DISSOLVED OXYGEN PPM				TURBIDITY JCU		SALINITY PPT		TIDE HEIGHT FT	
	WEEK	MO DA YR	MAX	MIN	MAX	MIN	MAX	SAT	MIN	SAT	MAX	MIN	MAX	MIN	MAX	MIN
	1	1 1 77	2.4	0.6	7.9	7.6	12.6	100.	11.3	90.	13	11	8.99	8.86	4.4	3.3
	1	1 2 77	3.3	2.2	7.8	7.2	12.8	103.	9.2	76.	13	10	9.12	8.93	4.7	2.5
	1	1 3 77	2.5	0.4	8.1	7.8	13.6	107.	11.3	92.	11	9	9.24	9.05	6.2	4.7
	1	1 4 77	1.5	0.6	8.7	7.7	15.1	121.	13.0	102.	***	***	9.12	8.99	6.2	5.0
	1	1 5 77	2.3	1.4	8.9	8.6	15.0	121.	13.7	112.	18	16	9.62	9.31	6.7	5.2
	1	1 6 77	1.7	0.7	8.9	8.6	15.1	121.	14.0	112.	17	15	9.50	9.12	6.8	5.3
	1	1 7 77	1.0	0.3	8.7	8.3	14.5	113.	13.7	107.	16	14	9.24	8.80	6.7	5.1
EXTREME			3.3	0.3	8.9	7.2	15.1	121.	9.2	76.	18.	9.	9.62	8.80	6.8	2.5
AVERAGE			2.1	0.9	8.4	8.0	14.1	112.	12.3	99.	15.	13.	9.26	9.01	6.0	4.4
	2	1 8 77	1.2	0.3	8.6	8.3	14.3	112.	12.9	102.	15	13	9.12	8.80	5.6	4.0
	2	1 9 77	1.6	0.9	8.7	8.2	14.3	113.	12.4	99.	15	12	9.18	8.93	6.7	5.0
	2	1 10 77	2.5	1.8	8.5	8.0	14.2	111.	12.3	98.	13	10	9.24	8.86	7.5	5.9
	2	1 11 77	2.2	1.1	8.3	7.4	13.6	110.	8.9	71.	***	10	9.50	8.99	6.3	4.1
	2	1 12 77	2.0	1.4	8.2	7.7	12.8	102.	10.5	85.	13	11	9.50	8.86	4.8	3.5
	2	1 13 77	2.4	1.9	8.0	7.6	12.1	97.	8.8	71.	14	12	9.56	9.05	5.5	2.7
	2	1 14 77	2.5	1.9	8.1	7.8	12.3	99.	9.5	78.	15	12	9.62	9.31	6.3	5.2
EXTREME			2.5	0.3	8.7	7.4	14.3	113.	8.8	71.	15.	10.	9.62	8.80	7.5	2.7
AVERAGE			2.1	1.3	8.3	7.9	13.4	106.	10.8	86.	14.	11.	9.39	8.97	6.1	4.3
	3	1 15 77	2.6	2.0	8.1	7.9	12.1	98.	9.9	81.	13	11	9.50	9.12	6.4	4.8
	3	1 16 77	2.3	2.0	****	****	12.4	100.	10.4	85.	12	10	9.62	9.24	6.9	4.5
	3	1 17 77	2.3	2.0	8.0	7.7	11.5	93.	9.8	80.	13	10	9.88	9.50	5.5	3.7
	3	1 18 77	2.9	2.0	8.2	7.8	12.5	103.	9.7	80.	12	8	10.26	9.75	5.6	4.1
	3	1 19 77	2.9	1.9	8.4	7.8	13.2	111.	10.2	84.	***	10	*****	*****	5.1	3.7
	3	1 20 77	2.9	2.1	8.2	7.9	12.6	104.	10.2	84.	12	10	10.00	9.88	5.8	3.9
	3	1 21 77	2.7	2.0	8.3	8.0	12.6	100.	10.9	90.	12	10	10.39	9.88	5.7	4.5
EXTREME			2.9	1.9	8.4	7.7	13.2	111.	9.7	80.	13.	8.	10.39	9.12	6.9	3.7
AVERAGE			2.7	2.0	8.2	7.8	12.4	101.	10.2	83.	12.	10.	9.94	9.56	5.9	4.2
	4	1 22 77	3.2	2.2	8.2	7.9	12.3	102.	10.8	89.	13	10	10.32	9.94	5.4	3.8
	4	1 23 77	2.8	2.2	8.2	7.9	12.1	100.	10.7	88.	15	10	10.52	10.00	5.4	3.6
	4	1 24 77	2.6	1.6	8.2	7.8	12.5	102.	10.4	86.	15	9	10.71	10.13	6.5	5.1
	4	1 25 77	2.9	2.2	8.3	8.0	12.1	100.	11.7	96.	10	7	10.58	10.26	6.5	5.4
	4	1 26 77	3.0	2.2	8.3	8.0	12.3	101.	11.0	92.	10	6	10.64	10.26	6.4	5.6
	4	1 27 77	2.3	1.7	8.2	7.7	11.8	97.	9.9	81.	12	8	10.52	10.26	5.9	4.6
	4	1 28 77	2.5	1.6	8.0	7.6	11.5	94.	8.9	74.	9	***	10.58	10.13	6.1	4.0
EXTREME			3.2	1.6	8.3	7.6	12.5	102.	8.9	74.	15.	6.	10.71	9.94	6.5	3.6
AVERAGE			2.8	2.0	8.2	7.8	12.1	99.	10.5	87.	12.	8.	10.55	10.14	6.0	4.6

Table 20. (Continued).

		DATE	TEMPERATURE DEG C		PH		DISSOLVED OXYGEN PPM				TURBIDITY JCU		SALINITY PPT		TIDE HEIGHT FT	
	WEEK	MO DA YR	MAX	MIN	MAX	MIN	MAX	SAT	MIN	SAT	MAX	MIN	MAX	MIN	MAX	MIN
	5	1 29 77	2.6	1.7	8.3	7.8	12.7	106.	10.8	88.	12	***	11.03	10.26	5.2	4.2
	5	1 30 77	2.6	2.0	8.3	7.9	13.0	108.	12.9	106.	8	6	10.77	10.32	5.2	3.6
	5	1 31 77	3.0	2.3	8.3	7.8	13.3	112.	9.6	80.	8	6	10.90	10.39	4.6	3.4
	5	2 1 77	3.6	2.4	8.3	7.8	13.2	113.	10.2	85.	9	6	10.96	10.52	4.7	2.9
	5	2 2 77	3.4	2.6	8.4	7.8	12.5	106.	9.4	79.	9	6	11.09	10.77	4.6	2.8
	5	2 3 77	3.4	2.0	8.5	8.3	13.1	108.	11.5	96.	7	4	11.16	10.64	5.8	4.4
	5	2 4 77	3.4	2.6	8.3	8.0	13.0	110.	11.0	93.	8	4	*****	10.64	5.4	4.1
EXTREME			3.6	1.7	8.5	7.8	13.3	113.	9.4	79.	12.	4.	11.16	10.26	5.8	2.8
AVERAGE			3.1	2.2	8.3	7.9	13.0	109.	10.8	90.	9.	5.	10.99	10.51	5.1	3.6
	6	2 5 77	3.4	2.2	8.5	8.1	14.0	118.	10.2	87.	8	6	11.09	10.64	5.9	4.8
	6	2 6 77	3.8	2.4	8.7	8.1	15.5	133.	10.0	85.	8	6	11.16	10.64	4.6	3.4
	6	2 7 77	3.5	2.6	8.4	8.2	13.5	113.	11.0	92.	8	5	11.09	10.64	4.7	3.5
	6	2 8 77	3.2	2.2	8.5	8.1	13.5	114.	11.6	97.	10	6	11.09	10.45	5.2	3.6
	6	2 9 77	3.2	2.0	8.5	7.9	14.0	118.	10.9	90.	11	3	10.90	10.26	5.9	4.4
	6	2 10 77	2.9	2.2	8.2	8.0	12.4	103.	11.0	92.	7	5	10.90	10.39	5.8	4.6
	6	2 11 77	3.3	2.2	8.4	8.0	12.4	104.	10.8	89.	7	4	10.96	10.13	5.8	4.3
EXTREME			3.8	2.0	8.7	7.9	15.5	133.	10.0	85.	11.	3.	11.16	10.13	5.9	3.4
AVERAGE			3.3	2.3	8.5	8.1	13.6	115.	10.8	90.	8.	5.	11.03	10.45	5.4	4.1
	7	2 12 77	3.2	2.2	8.3	7.9	12.3	104.	10.5	86.	6	4	10.90	10.20	6.0	4.7
	7	2 13 77	3.4	1.8	8.4	7.8	12.5	106.	10.6	89.	6	3	11.03	10.26	6.5	5.2
	7	2 14 77	3.0	2.2	8.4	7.8	12.2	102.	10.0	84.	9	5	11.03	10.39	6.7	5.1
	7	2 15 77	3.2	2.3	8.3	7.7	12.7	107.	9.3	77.	11	8	11.16	10.39	6.5	4.7
	7	2 16 77	3.4	2.6	8.3	8.0	12.9	109.	11.4	96.	***	***	11.09	10.45	5.4	4.1
	7	2 17 77	4.0	3.0	8.5	7.9	14.0	120.	11.9	100.	***	4	11.22	10.64	5.3	4.0
	7	2 18 77	4.0	3.0	8.6	8.1	14.3	123.	11.8	100.	6	4	11.16	10.45	6.4	4.7
EXTREME			4.0	1.8	8.6	7.7	14.3	123.	9.3	77.	11.	3.	11.22	10.20	6.7	4.0
AVERAGE			3.5	2.4	8.4	7.9	13.0	110.	10.8	90.	8.	5.	11.08	10.40	6.1	4.6
	8	2 19 77	4.0	3.4	8.5	8.2	14.6	125.	12.3	105.	8	5	11.09	10.45	6.4	5.1
	8	2 20 77	3.7	2.9	8.4	8.1	13.3	114.	12.0	101.	7	4	10.90	10.45	6.6	5.2
	8	2 21 77	4.0	3.0	8.5	8.2	14.3	123.	12.1	103.	***	***	10.96	10.52	5.7	4.4
	8	2 22 77	4.0	3.2	8.4	8.0	13.9	119.	11.7	99.	***	4	10.96	10.39	6.2	4.9
	8	2 23 77	4.6	3.4	8.5	8.2	14.3	124.	12.4	106.	8	4	10.77	10.52	5.2	4.2
	8	2 24 77	4.7	4.0	8.5	8.1	13.8	120.	12.5	108.	***	4	10.90	10.13	6.9	4.4
	8	2 25 77	5.5	3.8	8.4	8.1	14.2	123.	12.8	109.	10	6	10.64	9.62	6.9	5.5
EXTREME			5.5	2.9	8.5	8.0	14.6	125.	11.7	99.	10.	4.	11.09	9.62	6.9	4.2
AVERAGE			4.4	3.4	8.5	8.1	14.1	121.	12.3	104.	8.	5.	10.89	10.30	6.3	4.8

Table 20. (Continued).

	WEEK	DATE MO	DA	YR	TEMPERATURE DEG C MAX	TEMPERATURE DEG C MIN	PH MAX	PH MIN	DISSOLVED OXYGEN PPM MAX	DISSOLVED OXYGEN PPM SAT	DISSOLVED OXYGEN PPM MIN	DISSOLVED OXYGEN PPM SAT	TURBIDITY JCU MAX	TURBIDITY JCU MIN	SALINITY PPT MAX	SALINITY PPT MIN	TIDE HEIGHT FT MAX	TIDE HEIGHT FT MIN
	9	2	26	77	6.2	5.8	8.5	8.2	14.7	132.	12.9	113.	***	***	9.94	*****	5.6	4.7
	9	2	27	77	7.9	5.6	8.5	8.1	15.0	134.	12.3	113.	***	***	10.26	10.13	6.7	5.4
	9	2	28	77	7.3	5.4	****	****	13.9	124.	12.6	111.	***	***	10.71	9.31	6.5	5.2
	9	3	1	77	6.2	3.9	8.3	8.2	13.5	121.	12.4	108.	***	4	10.45	9.43	6.4	5.4
	9	3	2	77	6.4	4.5	8.5	8.3	13.1	118.	12.1	105.	9	5	10.39	10.00	5.7	4.2
	9	3	3	77	7.1	4.2	8.6	8.4	13.3	121.	11.8	102.	8	5	10.20	9.88	6.0	4.9
	9	3	4	77	7.2	6.8	8.5	8.6	12.8	117.	11.2	102.	9	5	10.20	9.69	6.9	5.0
EXTREME					7.9	3.9	8.5	8.1	15.0	134.	11.2	102.	9.	4.	10.71	9.31	6.9	4.2
AVERAGE					6.9	5.2	8.5	8.3	13.8	124.	12.2	108.	9.	5.	10.31	9.74	6.3	5.0
	10	3	5	77	9.4	7.1	8.5	8.2	12.1	114.	11.1	103.	8	6	9.88	9.12	6.9	5.2
	10	3	6	77	8.8	8.0	8.6	8.4	12.6	119.	11.6	108.	9	7	9.81	9.37	6.4	5.2
	10	3	7	77	9.2	8.0	8.6	8.4	12.9	122.	11.8	110.	9	5	9.94	9.43	6.3	5.1
	10	3	8	77	7.2	****	8.5	8.0	13.1	124.	11.7	108.	***	***	*****	9.56	6.5	5.1
	10	3	9	77	10.4	7.0	8.6	****	13.0	118.	11.3	105.	***	***	*****	*****	6.5	5.4
	10	3	10	77	10.4	7.7	8.8	8.4	13.3	125.	12.4	114.	10	8	7.98	7.42	6.3	5.2
	10	3	11	77	12.0	8.0	9.0	8.8	14.1	136.	12.7	118.	10	8	7.80	7.11	6.0	4.8
EXTREME					12.0	7.0	9.0	8.0	14.1	136.	11.1	103.	10.	5.	9.94	7.11	6.9	4.8
AVERAGE					9.6	7.6	8.7	8.4	13.0	123.	11.8	109.	9.	7.	9.08	8.67	6.4	5.1
	11	3	12	77	13.2	10.4	9.0	8.7	13.9	139.	12.4	119.	12	9	7.36	7.05	5.9	4.6
	11	3	13	77	13.3	12.2	9.0	8.6	12.8	127.	10.9	108.	11	10	7.36	7.05	7.2	5.4
	11	3	14	77	12.7	11.8	8.9	8.7	12.2	124.	11.1	115.	10	9	7.36	7.11	6.8	5.3
	11	3	15	77	14.0	11.5	9.1	8.6	13.5	140.	11.0	110.	9	7	7.36	6.99	6.5	5.2
	11	3	16	77	13.1	12.4	9.1	8.9	13.4	139.	11.9	119.	13	8	7.36	6.74	6.8	5.6
	11	3	17	77	12.6	11.6	9.2	8.9	12.7	126.	10.9	107.	13	8	6.99	6.74	6.6	5.5
	11	3	18	77	12.2	11.3	9.2	9.0	12.6	124.	10.9	106.	12	7	6.87	6.68	6.9	5.0
EXTREME					14.0	10.4	9.2	8.6	13.9	140.	10.9	106.	13.	7.	7.36	6.68	7.2	4.6
AVERAGE					13.0	11.6	9.1	8.8	13.0	131.	11.3	112.	11.	8.	7.24	6.91	6.7	5.2
	12	3	19	77	17.3	10.6	9.4	8.9	13.7	135.	9.6	92.	***	7	6.87	6.68	5.8	4.3
	12	3	20	77	11.2	9.7	9.3	9.1	12.3	116.	11.0	105.	***	***	6.74	6.62	6.9	5.2
	12	3	21	77	10.8	9.1	****	****	13.8	131.	10.3	95.	***	***	6.62	6.38	6.4	5.2
	12	3	22	77	9.7	8.2	****	****	****	****	****	****	***	***	6.13	6.01	6.7	4.7
	12	3	23	77	8.2	6.8	9.3	8.8	****	****	****	****	***	***	6.01	5.64	4.7	3.1
	12	3	24	77	8.2	7.1	9.3	8.9	12.6	113.	10.4	91.	***	***	5.89	5.77	5.2	3.7
	12	3	25	77	8.0	5.8	9.5	8.9	14.2	127.	10.3	88.	***	***	5.89	5.77	5.0	3.8
EXTREME					17.3	5.8	9.5	8.8	14.2	135.	9.6	88.	****	7.	6.87	5.64	6.9	3.1
AVERAGE					10.5	8.2	9.4	8.9	13.3	124.	10.3	94.	****	7.	6.31	6.12	5.8	4.3

Table 20. (Continued).

		DATE	TEMPERATURE DEG C		PH		DISSOLVED OXYGEN PPM				TURBIDITY JCU		SALINITY PPT		TIDE HEIGHT FT	
	WEEK	MO DA YR	MAX	MIN	MAX	MIN	MAX	SAT	MIN	SAT	MAX	MIN	MAX	MIN	MAX	MIN
	13	3 26 77	8.6	6.4	9.9	9.4	13.8	124.	9.0	78.	15	11	6.13	5.89	5.8	4.4
	13	3 27 77	9.9	7.0	9.8	9.5	15.1	142.	12.0	105.	12	10	6.13	5.83	6.8	5.6
	13	3 28 77	9.9	8.8	9.7	9.6	13.8	126.	12.3	112.	10	8	6.07	5.95	7.3	6.2
	13	3 29 77	13.4	9.1	9.8	9.5	14.2	141.	11.4	105.	13	8	6.13	5.77	6.8	5.8
	13	3 30 77	15.6	11.8	9.8	9.4	13.6	141.	11.6	116.	13	8	6.25	5.89	6.2	5.1
	13	3 31 77	14.6	13.9	9.6	9.3	12.2	126.	10.2	103.	14	11	6.50	6.13	6.2	4.9
	13	4 1 77	****	****	9.7	9.1	13.6	****	9.2	****	18	8	7.80	6.44	5.9	4.7
EXTREME			15.6	6.4	9.9	9.1	15.1	142.	9.0	78.	18.	8.	7.80	5.77	7.3	4.4
AVERAGE			12.0	9.5	9.8	9.4	13.8	133.	11.1	103.	14.	9.	6.43	5.98	6.4	5.2
	14	4 2 77	14.2	12.8	9.3	9.0	13.1	134.	9.1	91.	16	8	6.19	5.89	6.8	5.5
	14	4 3 77	15.3	13.1	9.6	8.9	13.5	140.	8.3	84.	12	8	6.19	5.77	7.0	4.8
	14	4 4 77	14.6	12.5	9.5	8.9	12.2	125.	9.0	90.	15	10	6.01	5.77	6.7	5.4
	14	4 5 77	13.0	12.0	9.2	8.8	10.0	99.	8.1	80.	14	10	5.89	5.40	7.2	5.2
	14	4 6 77	12.1	11.3	9.3	8.4	11.1	108.	7.8	75.	15	10	5.89	5.71	6.5	4.5
	14	4 7 77	11.9	9.8	9.4	8.9	11.5	111.	9.1	85.	15	10	5.71	5.46	6.7	4.4
	14	4 8 77	12.3	10.8	9.5	8.9	11.8	115.	9.1	86.	14	9	5.83	5.46	6.8	4.0
EXTREME			15.3	9.8	9.6	8.4	13.5	140.	7.8	75.	16.	8.	6.19	5.40	7.2	4.0
AVERAGE			13.3	11.8	9.4	8.8	11.9	119.	8.6	84.	14.	9.	5.96	5.64	6.8	4.8
	15	4 9 77	12.5	9.0	9.4	9.0	11.2	110.	9.4	88.	16	10	5.64	5.40	5.8	3.9
	15	4 10 77	13.0	10.5	9.7	9.0	11.9	118.	8.9	84.	18	10	5.64	5.16	6.1	4.9
	15	4 11 77	15.0	11.0	9.7	9.2	14.1	143.	9.7	91.	17	10	5.46	4.56	5.9	4.9
	15	4 12 77	16.8	14.1	10.0	9.5	****	****	****	****	***	12	4.98	4.56	6.1	5.2
	15	4 13 77	17.1	11.5	10.0	9.7	****	****	****	****	***	***	4.86	4.50	6.0	5.0
	15	4 14 77	17.7	15.8	9.8	8.7	****	****	****	****	***	***	4.74	4.44	6.2	5.1
	15	4 15 77	19.0	16.2	9.9	8.7	****	****	****	****	***	10	4.80	4.62	6.3	5.1
EXTREME			19.0	9.0	10.0	8.7	14.1	143.	8.9	84.	18.	10.	5.64	4.44	6.3	3.9
AVERAGE			15.9	12.6	9.8	9.1	12.4	123.	9.3	88.	17.	10.	5.16	4.75	6.1	4.9
	16	4 16 77	19.7	17.0	10.0	9.7	****	****	****	****	***	***	4.80	4.62	6.6	5.0
	16	4 17 77	20.4	17.4	10.0	9.7	****	****	****	****	***	***	4.74	4.50	6.3	4.9
	16	4 18 77	19.7	17.9	9.9	9.7	****	****	****	****	***	12	4.68	4.50	6.5	5.4
	16	4 19 77	21.3	18.5	9.9	9.6	****	****	****	****	23	14	4.56	4.33	6.6	4.9
	16	4 20 77	20.7	19.1	9.7	9.3	12.1	138.	8.6	96.	***	12	4.38	4.03	6.3	5.0
	16	4 21 77	22.5	18.9	9.6	9.3	14.3	167.	11.3	125.	21	14	4.21	4.09	6.7	5.1
	16	4 22 77	22.9	20.3	9.7	9.3	13.0	154.	9.9	113.	24	16	4.44	4.21	6.3	5.0
EXTREME			22.9	17.0	10.0	9.3	14.3	167.	8.6	96.	24.	12.	4.80	4.03	6.7	4.9
AVERAGE			21.0	18.4	9.8	9.5	13.1	153.	9.9	111.	23.	14.	4.55	4.33	6.5	5.0

Table 20. (Continued).

WEEK	DATE MO DA YR	TEMPERATURE DEG C MAX	TEMPERATURE DEG C MIN	PH MAX	PH MIN	DISSOLVED OXYGEN PPM MAX	DISSOLVED OXYGEN PPM SAT	DISSOLVED OXYGEN PPM MIN	DISSOLVED OXYGEN PPM SAT	TURBIDITY JCU MAX	TURBIDITY JCU MIN	SALINITY PPT MAX	SALINITY PPT MIN	TIDE HEIGHT FT MAX	TIDE HEIGHT FT MIN
17	4 23 77	22.9	21.2	9.7	9.3	12.7	152.	8.8	102.	19	13	4.44	4.21	6.1	4.9
17	4 24 77	22.2	21.3	9.5	9.2	11.8	138.	8.1	94.	***	***	4.38	4.33	6.7	5.0
17	4 25 77	22.7	20.4	9.4	8.9	12.8	152.	7.5	85.	***	14	4.27	4.03	6.7	5.5
17	4 26 77	20.7	18.8	9.3	8.9	11.2	126.	7.2	81.	21	12	4.27	4.03	7.0	5.8
17	4 27 77	19.0	17.2	9.2	8.4	11.1	123.	6.7	73.	17	12	4.80	4.21	6.5	5.3
17	4 28 77	17.2	16.4	9.5	8.9	10.6	116.	8.5	91.	19	12	4.86	4.44	7.1	5.5
17	4 29 77	18.9	16.8	9.6	9.0	12.5	138.	8.3	88.	24	13	4.74	4.62	6.6	4.7
EXTREME		22.9	16.8	9.7	8.4	12.8	152.	6.7	73.	24.	12.	4.86	4.03	7.1	4.7
AVERAGE		20.5	19.2	9.5	8.9	11.8	135.	7.9	88.	20.	13.	4.54	4.27	6.7	5.2
18	4 30 77	24.0	21.0	9.8	9.3	15.0	167.	10.7	114.	27	13	4.74	4.44	6.8	5.4
18	5 1 77	19.7	17.6	9.8	9.4	13.1	147.	10.3	115.	34	23	4.92	4.50	6.6	5.4
18	5 2 77	19.7	18.3	9.7	9.4	12.1	136.	9.5	105.	***	14	4.92	4.56	6.8	5.1
18	5 3 77	21.1	18.4	9.6	9.1	12.8	148.	7.9	87.	16	12	4.92	4.80	6.6	4.8
18	5 4 77	19.6	19.0	9.4	9.0	10.8	121.	8.4	94.	20	13	4.86	4.50	6.6	5.3
18	5 5 77	21.4	18.7	9.7	8.8	13.2	152.	7.6	84.	20	15	5.28	4.62	7.1	5.3
18	5 6 77	23.4	19.2	9.6	8.9	12.9	150.	7.8	88.	23	15	5.40	4.92	7.1	5.3
EXTREME		24.0	17.6	9.8	8.8	15.0	167.	7.6	84.	34.	12.	5.40	4.44	7.1	4.8
AVERAGE		21.3	18.9	9.7	9.1	12.8	146.	8.9	98.	24.	15.	5.01	4.62	6.8	5.2
19	5 7 77	21.5	20.6	9.7	8.9	13.7	160.	7.7	89.	24	19	5.46	5.04	7.2	5.6
19	5 8 77	22.4	19.7	9.6	8.4	11.8	139.	5.5	62.	27	22	5.46	4.98	7.1	5.8
19	5 9 77	21.5	15.2	9.4	8.8	10.4	122.	7.7	87.	32	20	5.58	4.92	7.4	4.0
19	5 10 77	15.5	14.5	9.4	8.8	11.4	118.	11.4	117.	29	17	5.46	5.10	6.3	4.0
19	5 11 77	16.4	14.2	9.6	9.0	12.5	133.	8.7	88.	23	14	5.64	5.40	6.8	5.7
19	5 12 77	17.5	14.9	9.7	9.2	13.3	143.	10.0	103.	20	16	6.13	5.58	6.8	5.5
19	5 13 77	18.4	15.2	9.4	8.2	11.5	124.	6.4	67.	20	15	6.50	5.77	6.6	4.8
EXTREME		22.4	14.2	9.7	8.2	13.7	160.	5.5	62.	32.	14.	6.50	4.92	7.4	4.0
AVERAGE		19.0	16.3	9.5	8.8	12.1	134.	8.2	88.	25.	18.	5.75	5.26	6.9	5.1
20	5 14 77	21.7	17.6	9.9	8.8	15.5	181.	8.0	88.	***	***	6.38	6.50	6.7	5.5
20	5 15 77	21.5	19.0	9.8	9.2	17.4	205.	10.2	115.	***	***	6.19	5.89	7.2	5.3
20	5 16 77	23.0	19.7	10.1	9.2	14.4	174.	10.1	115.	***	***	7.73	6.31	6.8	5.7
20	5 17 77	25.3	20.9	10.1	9.5	13.6	172.	10.2	120.	***	***	7.61	6.81	7.2	4.9
20	5 18 77	25.7	23.0	10.2	9.4	12.5	157.	7.9	97.	***	***	7.36	6.81	6.3	5.0
20	5 19 77	24.4	22.5	****	****	12.8	156.	6.3	76.	***	***	7.36	6.01	6.6	5.5
20	5 20 77	25.8	22.0	9.7	8.0	12.8	163.	7.2	86.	***	***	6.93	6.62	7.1	5.5
EXTREME		25.8	17.6	10.2	8.0	17.4	205.	6.3	76.	****	****	7.73	5.89	7.2	4.9
AVERAGE		23.9	20.7	10.0	9.0	14.1	173.	8.6	99.	****	****	7.08	6.42	6.8	5.3

Table 20. (Continued).

		DATE	TEMPERATURE DEG C		PH		DISSOLVED OXYGEN PPM				TURBIDITY JCU		SALINITY PPT		TIDE HEIGHT FT	
	WEEK	MO DA YR	MAX	MIN	MAX	MIN	MAX	SAT	MIN	SAT	MAX	MIN	MAX	MIN	MAX	MIN
	21	5 21 77	26.6	23.6	9.2	8.2	11.3	142.	8.7	107.	26	12	6.74	6.44	6.9	5.3
	21	5 22 77	27.6	24.0	8.8	8.1	12.4	163.	7.0	87.	36	25	6.87	6.44	6.5	5.3
	21	5 23 77	26.7	24.8	****	****	11.9	149.	5.6	70.	***	***	6.87	6.56	6.6	5.4
	21	5 24 77	25.3	24.4	****	****	10.7	135.	6.4	80.	20	14	6.81	6.56	6.5	5.3
	21	5 25 77	24.3	23.9	****	****	8.6	107.	4.8	59.	19	11	6.68	6.44	6.6	5.5
	21	5 26 77	28.0	23.2	****	****	14.8	198.	6.0	73.	22	8	6.68	6.13	6.3	4.9
	21	5 27 77	29.0	25.0	9.8	9.0	15.7	207.	9.1	115.	38	20	7.18	6.74	6.9	5.6
EXTREME			29.0	23.2	9.8	8.1	15.7	207.	4.8	59.	38.	8.	7.18	6.13	6.9	4.9
AVERAGE			26.8	24.1	9.3	8.4	12.2	157.	6.8	84.	27.	15.	6.83	6.47	6.6	5.3
	22	5 28 77	26.2	24.7	9.4	8.6	10.7	138.	5.9	74.	47	34	7.18	6.68	7.0	5.6
	22	5 29 77	25.8	23.6	9.0	7.9	7.6	96.	3.6	45.	***	***	6.99	6.81	7.1	5.5
	22	5 30 77	23.5	22.5	9.3	8.1	8.0	101.	3.8	46.	***	***	6.99	6.87	7.2	5.9
	22	5 31 77	23.2	21.8	9.5	8.5	14.1	169.	4.8	58.	22	17	7.61	7.24	7.4	5.6
	22	6 1 77	23.4	21.6	9.2	8.5	9.6	114.	5.3	63.	21	17	7.49	7.24	7.4	4.3
	22	6 2 77	26.0	22.2	9.7	8.6	****	****	4.8	58.	28	16	7.55	7.24	****	****
	22	6 3 77	24.6	23.2	9.5	8.5	13.4	168.	4.5	56.	29	20	7.61	7.11	****	****
EXTREME			26.2	21.6	9.7	7.9	14.1	169.	3.6	45.	47.	16.	7.61	6.68	7.4	4.3
AVERAGE			24.7	22.8	9.4	8.4	10.6	131.	4.7	57.	29.	21.	7.34	7.03	7.2	5.4
	23	6 4 77	24.8	22.6	9.5	8.9	13.0	163.	8.1	99.	28	20	7.55	6.99	****	****
	23	6 5 77	23.5	22.8	9.2	8.5	****	****	****	****	26	20	7.86	7.05	****	****
	23	6 6 77	22.9	22.0	9.3	8.1	****	****	****	****	33	22	8.17	7.80	****	****
	23	6 7 77	22.0	20.7	9.2	8.3	****	****	****	****	33	26	8.23	7.92	****	****
	23	6 8 77	22.1	20.2	9.3	8.8	****	****	****	****	38	27	8.49	8.05	****	****
	23	6 9 77	****	****	****	****	13.7	160.	****	****	***	***	8.49	8.05	****	****
	23	6 10 77	****	****	****	****	****	****	****	****	***	***	*****	*****	****	****
EXTREME			24.8	20.2	9.5	8.1	13.7	163.	8.1	99.	38.	20.	8.49	6.99	****	****
AVERAGE			23.1	21.7	9.3	8.5	13.4	162.	8.1	99.	32.	23.	8.13	7.64	****	****
	24	6 11 77	22.8	18.1	8.9	7.4	10.3	121.	6.2	70.	31	24	8.80	8.17	6.9	5.6
	24	6 12 77	22.6	19.2	8.6	7.9	10.6	127.	7.9	92.	38	30	8.86	8.49	7.1	5.6
	24	6 13 77	24.8	21.4	9.2	7.9	10.3	126.	7.5	89.	26	18	9.12	7.30	7.0	5.5
	24	6 14 77	23.6	22.7	9.3	8.6	10.8	133.	6.4	78.	22	18	9.12	8.80	7.0	5.5
	24	6 15 77	24.0	21.8	9.2	8.4	11.0	135.	7.2	87.	28	21	9.12	8.86	7.0	5.6
	24	6 16 77	26.6	22.5	9.3	8.3	9.2	113.	6.6	80.	25	19	9.37	8.80	7.0	5.6
	24	6 17 77	****	****	****	****	****	****	****	****	***	***	*****	*****	****	****
EXTREME			26.6	18.1	9.3	7.4	11.0	135.	6.2	70.	38.	18.	9.37	7.30	7.1	5.5
AVERAGE			24.1	21.0	9.1	8.1	10.4	126.	7.0	83.	28.	22.	9.06	8.40	7.0	5.6

Table 20. (Continued).

		DATE	TEMPERATURE DEG C		PH		DISSOLVED OXYGEN PPM				TURBIDITY JCU		SALINITY PPT		TIDE HEIGHT FT	
	WEEK	MO DA YR	MAX	MIN	MAX	MIN	MAX	SAT	MIN	SAT	MAX	MIN	MAX	MIN	MAX	MIN
	25	6 18 77	****	****	****	****	****	****	****	****	***	***	*****	*****	****	****
	25	6 19 77	****	****	****	****	****	****	****	****	***	***	*****	*****	****	****
	25	6 20 77	****	****	****	****	****	****	****	****	***	***	*****	*****	****	****
	25	6 21 77	****	****	****	****	****	****	****	****	***	***	*****	*****	****	****
	25	6 22 77	****	****	****	****	****	****	****	****	***	***	*****	*****	****	****
	25	6 23 77	26.6	22.3	9.6	7.7	10.8	139.	4.9	60.	18	12	*****	*****	6.5	5.1
	25	6 24 77	26.2	24.8	9.2	8.4	9.9	128.	6.9	88.	22	12	10.13	8.99	7.0	5.8
EXTREME			26.6	22.3	9.6	7.7	10.8	139.	4.9	60.	22.	12.	10.13	8.99	7.0	5.1
AVERAGE			26.4	23.6	9.4	8.0	10.4	134.	5.9	74.	20.	12.	10.13	8.99	6.8	5.5
	26	6 25 77	25.7	24.7	9.0	8.4	7.7	99.	3.9	50.	16	8	9.43	7.24	6.8	5.6
	26	6 26 77	26.8	24.2	9.0	8.1	****	****	****	****	18	9	9.88	9.43	6.8	5.2
	26	6 27 77	29.5	25.5	9.3	8.1	****	****	****	****	23	13	10.26	9.81	7.0	5.5
	26	6 28 77	28.8	26.5	9.2	8.3	****	****	****	****	20	***	9.62	8.86	7.3	5.3
	26	6 29 77	28.0	25.9	9.0	7.9	****	****	****	****	***	***	9.88	8.93	7.0	5.0
	26	6 30 77	27.9	25.3	8.5	7.7	****	****	****	****	***	***	10.00	9.62	6.6	5.2
	26	7 1 77	****	****	****	****	****	****	****	****	***	***	*****	*****	****	****
EXTREME			29.5	24.2	9.3	7.7	7.7	99.	3.9	50.	23.	8.	10.26	7.24	7.3	5.0
AVERAGE			27.8	25.4	9.0	8.1	7.7	99.	3.9	50.	19.	10.	9.85	8.98	6.9	5.3
	26	7 2 77	27.3	25.6	8.7	7.6	8.1	108.	2.8	36.	7	3	10.20	9.37	6.5	4.8
	27	7 3 77	28.2	26.5	8.9	8.0	10.5	141.	4.8	62.	11	9	10.64	9.37	6.8	4.8
	27	7 4 77	28.0	25.9	8.6	7.8	8.8	118.	5.1	66.	4	1	9.88	9.37	6.6	5.1
	27	7 5 77	30.6	27.0	9.6	8.1	11.5	158.	5.2	69.	***	***	10.84	9.94	6.8	5.1
	27	7 6 77	31.5	27.8	9.5	8.7	11.6	163.	7.0	94.	***	***	10.77	9.81	6.9	5.3
	27	7 7 77	32.4	28.8	9.8	8.7	10.0	145.	6.7	92.	***	***	11.29	10.39	7.1	5.8
	27	7 8 77	31.7	29.2	9.8	8.8	9.8	141.	5.5	76.	14	8	11.35	10.39	7.3	5.9
EXTREME			32.4	25.6	9.8	7.6	11.6	163.	2.8	36.	14.	1.	11.35	9.37	7.3	4.8
AVERAGE			30.0	27.3	9.3	8.2	10.0	139.	5.3	71.	9.	5.	10.71	9.80	6.9	5.3
	28	7 9 77	32.8	29.3	9.8	8.6	9.6	138.	4.7	66.	20	11	12.19	10.71	7.2	5.7
	28	7 10 77	32.4	29.4	9.3	8.4	7.9	114.	3.7	52.	11	5	12.39	10.90	7.3	5.7
	28	7 11 77	31.5	29.0	9.3	8.3	8.2	115.	4.0	56.	9	2	12.58	10.77	7.9	6.7
	28	7 12 77	33.1	28.9	9.7	8.5	10.6	155.	5.1	71.	11	3	12.72	11.03	8.3	6.1
	28	7 13 77	33.9	28.9	10.2	8.6	10.4	152.	5.7	80.	10	3	12.65	10.96	7.8	6.7
	28	7 14 77	32.8	30.2	9.8	7.4	11.3	163.	4.6	65.	***	***	12.39	10.90	6.9	4.9
	28	7 15 77	32.0	28.8	9.5	8.7	11.6	166.	5.3	74.	***	***	11.29	10.71	6.7	5.1
EXTREME			33.9	28.8	10.2	7.4	11.6	166.	3.7	52.	20.	2.	12.72	10.71	8.3	4.9
AVERAGE			32.6	29.2	9.7	8.4	9.9	143.	4.7	66.	12.	5.	12.32	10.85	7.4	5.8

Table 20. (Continued).

WEEK	DATE MO	DA	YR	TEMPERATURE DEG C MAX	TEMPERATURE DEG C MIN	PH MAX	PH MIN	DISSOLVED OXYGEN PPM MAX	DISSOLVED OXYGEN PPM SAT	DISSOLVED OXYGEN PPM MIN	DISSOLVED OXYGEN PPM SAT	TURBIDITY JCU MAX	TURBIDITY JCU MIN	SALINITY PPT MAX	SALINITY PPT MIN	TIDE HEIGHT FT MAX	TIDE HEIGHT FT MIN
29	7	16	77	32.6	29.4	9.1	8.3	8.1	117.	4.5	63.	6	5	11.03	9.69	6.6	5.5
29	7	17	77	32.5	30.0	9.1	8.3	5.4	78.	3.2	45.	7	5	10.96	10.45	7.0	5.4
29	7	18	77	31.7	29.9	9.1	8.1	9.5	136.	4.8	67.	8	4	10.84	10.64	6.7	5.0
29	7	19	77	33.2	29.7	9.4	8.0	12.0	175.	3.2	45.	6	4	10.71	9.69	6.4	5.0
29	7	20	77	32.1	30.5	9.4	8.1	12.2	175.	3.9	55.	6	3	10.52	9.18	6.7	5.5
29	7	21	77	32.2	30.3	9.4	8.2	11.7	169.	3.7	52.	6	2	10.90	9.81	6.6	5.3
29	7	22	77	30.8	27.2	9.4	8.4	11.2	158.	4.6	64.	***	***	10.90	10.39	6.1	4.6
EXTREME				33.2	27.2	9.4	8.0	12.2	175.	3.2	45.	8.	2.	11.03	9.18	7.0	4.6
AVERAGE				32.2	29.6	9.3	8.2	10.0	144.	4.0	56.	7.	4.	10.84	9.98	6.6	5.2
30	7	23	77	29.6	27.2	9.2	8.7	9.4	130.	4.8	65.	***	***	10.77	10.45	7.3	5.1
30	7	24	77	28.7	27.0	9.1	8.6	7.8	107.	4.0	54.	***	***	10.96	10.52	7.5	6.1
30	7	25	77	27.2	25.6	8.8	8.3	6.1	80.	4.9	65.	***	***	10.84	10.64	7.5	5.6
30	7	26	77	26.9	24.4	9.2	8.2	8.8	116.	3.3	26.	7	4	10.77	10.45	6.4	4.2
30	7	27	77	26.8	24.9	9.1	8.4	8.8	116.	5.4	69.	7	4	10.58	10.32	6.6	5.2
30	7	28	77	28.0	24.9	9.2	8.6	10.6	143.	6.2	80.	6	3	11.22	10.07	7.0	5.4
30	7	29	77	28.3	25.6	8.8	8.1	10.7	145.	6.2	81.	7	3	11.16	10.64	7.0	5.5
EXTREME				29.6	24.4	9.2	8.1	10.7	145.	3.3	26.	7.	3.	11.22	10.07	7.5	4.2
AVERAGE				27.9	25.7	9.1	8.4	8.9	120.	5.0	63.	7.	4.	10.90	10.44	7.0	5.3
31	7	30	77	27.1	26.1	8.7	8.2	9.0	119.	5.8	76.	10	6	11.03	9.12	7.3	5.5
31	7	31	77	28.3	26.0	8.9	8.3	9.4	127.	5.8	76.	12	8	10.84	9.50	7.1	5.8
31	8	1	77	28.2	26.7	****	****	8.8	119.	5.4	72.	***	12	11.42	9.75	7.5	5.8
31	8	2	77	28.8	26.4	****	****	10.6	145.	5.0	66.	20	12	11.42	10.52	6.7	5.3
31	8	3	77	28.5	27.0	****	****	10.0	136.	5.4	72.	21	13	11.55	10.64	6.9	5.7
31	8	4	77	29.5	26.9	9.9	****	10.0	138.	4.9	65.	20	14	11.42	10.64	6.9	5.6
31	8	5	77	29.6	27.8	****	****	8.9	123.	5.7	77.	20	14	11.55	10.77	6.7	5.5
EXTREME				29.6	26.0	9.9	8.2	10.6	145.	4.9	65.	21.	6.	11.55	9.12	7.5	5.3
AVERAGE				28.6	26.7	9.2	8.2	9.5	130.	5.4	72.	17.	11.	11.31	10.13	7.0	5.6
32	8	6	77	30.2	28.0	****	****	8.7	122.	4.5	61.	19	12	11.48	11.22	6.5	5.2
32	8	7	77	29.9	28.2	****	****	7.0	97.	4.3	60.	22	13	11.67	11.29	6.6	5.3
32	8	8	77	30.3	28.6	****	****	9.4	132.	4.5	62.	26	13	11.67	11.35	6.7	5.3
32	8	9	77	31.0	28.5	****	****	10.9	155.	4.9	68.	***	***	11.80	10.77	6.7	5.3
32	8	10	77	32.2	29.3	****	****	11.7	168.	6.1	85.	***	***	11.61	10.32	6.9	5.8
32	8	11	77	31.9	29.8	****	****	11.3	163.	4.8	67.	***	***	11.93	10.58	7.0	5.2
32	8	12	77	30.6	29.6	9.9	****	9.3	131.	5.0	70.	26	12	11.87	11.42	6.8	5.3
EXTREME				32.2	28.0	9.9	****	11.7	168.	4.3	60.	26.	12.	11.93	10.32	7.0	5.2
AVERAGE				30.9	28.9	9.9	****	9.8	138.	4.9	67.	23.	13.	11.72	10.99	6.7	5.3

Table 20. (Continued).

		DATE			TEMPERATURE DEG C		PH		DISSOLVED OXYGEN PPM				TURBIDITY JCU		SALINITY PPT		TIDE HEIGHT FT	
	WEEK	MO	DA	YR	MAX	MIN	MAX	MIN	MAX	SAT	MIN	SAT	MAX	MIN	MAX	MIN	MAX	MIN
	33	8	13	77	29.8	29.0	****	****	9.5	133.	5.2	72.	22	16	11.80	11.55	6.9	5.5
	33	8	14	77	29.2	28.5	****	****	7.5	109.	5.5	75.	24	18	11.80	11.55	7.1	5.7
	33	8	15	77	29.8	28.0	****	****	10.3	144.	4.4	60.	23	16	11.80	11.55	6.9	5.4
	33	8	16	77	29.7	28.6	****	****	10.4	145.	6.3	87.	22	18	11.80	11.29	7.0	5.6
	33	8	17	77	29.1	28.3	****	****	8.1	112.	6.5	89.	23	16	11.80	11.03	7.3	5.6
	33	8	18	77	28.3	27.0	****	****	8.6	117.	4.6	62.	23	15	11.93	11.55	6.5	5.0
	33	8	19	77	27.9	26.2	****	****	11.3	153.	5.3	70.	30	14	11.93	11.67	6.9	5.5
EXTREME					29.8	26.2	****	****	11.3	153.	4.4	60.	30.	14.	11.93	11.03	7.3	5.0
AVERAGE					29.1	27.9	****	****	9.4	130.	5.4	74.	24.	16.	11.84	11.45	6.9	5.5
	34	8	20	77	27.0	26.1	****	****	9.9	132.	6.2	82.	29	20	11.93	11.74	7.0	5.8
	34	8	21	77	26.1	25.1	****	****	8.0	105.	5.0	65.	***	***	12.00	11.80	7.7	5.8
	34	8	22	77	26.0	24.7	****	****	8.5	112.	5.0	65.	***	16	12.06	11.80	7.7	6.1
	34	8	23	77	27.4	25.0	****	****	12.1	163.	5.0	65.	***	16	12.06	11.87	7.1	5.1
	34	8	24	77	26.6	25.6	****	****	****	****	****	****	26	18	12.06	11.55	6.9	5.7
	34	8	25	77	26.2	24.2	****	****	****	****	****	****	***	***	11.93	11.42	6.8	5.0
	34	8	26	77	26.2	24.0	****	****	****	****	****	****	***	***	11.93	11.55	6.9	5.6
EXTREME					27.4	24.0	****	****	12.1	163.	5.0	65.	29.	16.	12.06	11.42	7.7	5.0
AVERAGE					26.5	25.0	****	****	9.6	128.	5.3	69.	28.	18.	12.00	11.67	7.2	5.6
	35	8	27	77	26.3	24.6	****	****	****	****	****	****	***	***	11.80	11.48	7.0	5.7
	35	8	28	77	27.9	25.3	****	****	****	****	****	****	***	16	*****	*****	7.0	5.6
	35	8	29	77	28.7	26.5	****	****	****	****	****	****	22	16	11.67	11.03	6.9	5.5
	35	8	30	77	30.2	27.2	****	****	****	****	****	****	23	10	*****	*****	6.7	5.4
	35	8	31	77	30.2	27.5	****	****	****	****	****	****	18	10	12.26	11.87	6.9	5.4
	35	9	1	77	30.3	28.0	8.1	7.5	****	****	****	****	22	12	*****	*****	7.2	5.8
	35	9	2	77	30.2	28.2	8.0	7.6	****	****	****	****	20	12	*****	*****	7.1	5.8
EXTREME					30.3	24.6	8.1	7.5	****	****	****	****	23.	10.	*****	11.03	7.2	5.4
AVERAGE					29.1	26.8	8.0	7.6	****	****	****	****	21.	13.	64.11	63.84	7.0	5.6
	36	9	3	77	29.3	28.3	7.8	7.2	****	****	****	****	18	12	*****	*****	6.4	5.1
	36	9	4	77	29.4	27.5	8.1	7.0	****	****	****	****	15	12	*****	*****	7.0	5.4
	36	9	5	77	29.6	27.8	8.0	7.3	****	****	****	****	20	10	*****	*****	7.2	6.1
	36	9	6	77	29.3	28.5	7.8	7.1	****	****	****	****	20	10	*****	*****	9.9	****
	36	9	7	77	****	****	7.8	7.1	7.4	****	2.3	****	21	11	*****	*****	9.9	****
	36	9	8	77	****	****	7.9	7.2	9.5	****	4.1	****	24	14	*****	*****	9.9	****
	36	9	9	77	****	****	9.9	****	9.9	****	9.9	****	***	***	*****	*****	9.9	****
EXTREME					29.6	27.5	9.9	7.0	****	****	****	****	24.	10.	*****	*****	9.9	5.1
AVERAGE					29.4	28.0	8.2	7.1	****	****	****	****	20.	12.	*****	*****	8.6	5.5

Table 20. (Continued).

		DATE	TEMPERATURE DEG C		PH		DISSOLVED OXYGEN PPM				TURBIDITY JCU		SALINITY PPT		TIDE HEIGHT FT	
	WEEK	MO DA YR	MAX	MIN	MAX	MIN	MAX	SAT	MIN	SAT	MAX	MIN	MAX	MIN	MAX	MIN
	37	9 10 77	****	****	7.6	7.0	8.3	****	5.2	****	26	16	*****	*****	9.9	****
	37	9 11 77	****	****	7.9	7.2	10.9	****	5.6	****	33	19	*****	*****	6.8	5.4
	37	9 12 77	****	****	****	****	12.5	****	6.9	****	***	***	*****	*****	7.0	5.8
	37	9 13 77	****	****	8.3	7.7	11.2	****	7.6	****	22	15	*****	*****	7.4	6.2
	37	9 14 77	****	****	****	****	9.4	****	7.6	****	24	15	*****	*****	7.3	5.1
	37	9 15 77	****	****	****	****	9.8	****	6.5	****	24	18	*****	*****	6.6	4.8
	37	9 16 77	22.9	20.7	9.9	****	****	****	****	****	***	***	*****	*****	7.3	5.7
EXTREME			22.9	20.7	9.9	7.0	****	****	****	****	33.	15.	*****	*****	9.9	4.8
AVERAGE			22.9	20.7	8.4	7.3	****	****	****	****	26.	17.	*****	*****	7.5	5.5
	38	9 17 77	25.9	22.6	9.9	****	****	****	****	****	***	***	*****	*****	7.2	5.8
	38	9 18 77	26.1	22.0	8.4	7.5	****	****	****	****	***	***	*****	*****	7.1	5.4
	38	9 19 77	25.8	23.1	8.6	8.2	****	****	****	****	***	***	*****	*****	7.2	5.8
	38	9 20 77	25.2	24.3	9.9	****	10.8	****	7.5	****	17	9	*****	*****	7.2	5.9
	38	9 21 77	24.5	23.5	8.0	7.7	8.8	****	6.5	****	16	9	*****	*****	7.8	6.1
	38	9 22 77	23.5	22.8	7.9	7.7	7.0	****	5.4	****	16	4	*****	*****	7.8	6.5
	38	9 23 77	23.2	22.4	7.9	7.5	8.0	****	4.9	****	99	***	*****	*****	7.8	6.7
EXTREME			26.1	22.0	9.9	7.5	****	****	****	****	99.	4.	*****	*****	7.8	5.4
AVERAGE			24.9	23.0	8.7	7.7	****	****	****	****	37.	7.	*****	*****	7.4	6.0
	39	9 24 77	23.5	22.0	7.9	7.6	8.2	****	5.8	****	12	8	*****	*****	8.0	6.6
	39	9 25 77	23.2	22.5	7.8	7.5	7.3	****	5.5	****	13	10	*****	*****	8.0	6.8
	39	9 26 77	****	****	****	****	****	****	****	****	***	***	*****	*****	****	****
	39	9 27 77	****	****	****	****	****	****	****	****	***	***	*****	*****	****	****
	39	9 28 77	****	****	****	****	****	****	****	****	20	13	*****	*****	7.2	5.8
	39	9 29 77	****	****	****	****	****	****	****	****	***	***	*****	*****	****	****
	39	9 30 77	****	****	****	****	****	****	****	****	***	***	*****	*****	****	****
EXTREME			23.5	22.0	7.9	7.5	****	****	****	****	20.	8.	*****	*****	8.0	5.8
AVERAGE			23.4	22.3	7.9	7.6	****	****	****	****	15.	10.	*****	*****	7.7	6.4
	48	11 27 77	****	****	****	****	****	****	****	****	***	***	*****	*****	****	****
	48	11 28 77	****	****	****	****	****	****	****	****	***	***	*****	*****	****	****
	48	11 29 77	****	****	****	****	****	****	****	****	***	***	*****	*****	****	****
	48	11 30 77	****	****	****	****	****	****	****	****	***	***	*****	*****	****	****
	48	12 1 77	****	****	****	****	****	****	****	****	***	***	*****	*****	****	****
	48	12 2 77	7.6	6.9	****	****	****	****	****	****	***	***	9.88	8.99	6.9	5.6
	48	12 3 77	8.0	6.9	****	****	14.0	128.	10.8	99.	***	***	9.69	8.80	6.8	5.7
EXTREME			8.0	6.9	****	****	14.0	128.	10.8	99.	****	****	9.88	8.80	6.9	5.6
AVERAGE			7.8	6.9	****	****	14.0	128.	10.8	99.	****	****	9.78	8.89	6.9	5.7

Table 20. (Continued).

WEEK	DATE MO DA YR	TEMPERATURE DEG C MAX	TEMPERATURE DEG C MIN	PH MAX	PH MIN	DISSOLVED OXYGEN PPM MAX	DISSOLVED OXYGEN PPM SAT	DISSOLVED OXYGEN PPM MIN	DISSOLVED OXYGEN PPM SAT	TURBIDITY JCU MAX	TURBIDITY JCU MIN	SALINITY PPT MAX	SALINITY PPT MIN	TIDE HEIGHT FT MAX	TIDE HEIGHT FT MIN
49	12 4 77	8.0	7.3	****	****	14.8	137.	11.0	101.	***	***	9.50	9.05	6.7	5.3
49	12 5 77	8.1	7.5	****	****	14.0	129.	12.5	114.	***	***	*****	9.24	8.2	6.0
49	12 6 77	8.3	7.7	****	****	12.5	116.	10.6	99.	***	***	9.75	9.37	8.2	5.7
49	12 7 77	7.8	3.2	****	****	12.4	106.	11.2	99.	***	***	9.62	8.86	6.3	3.8
49	12 8 77	3.3	1.8	****	****	13.0	107.	11.5	94.	***	***	8.99	8.80	5.8	3.7
49	12 9 77	4.0	2.2	****	****	12.2	101.	11.7	96.	***	***	9.62	8.86	6.9	4.4
49	12 10 77	2.2	0.6	****	****	12.2	98.	11.4	90.	***	***	9.37	9.12	5.1	3.6
EXTREME		8.3	0.6	****	****	14.8	137.	10.6	90.	****	****	9.75	8.80	8.2	3.6
AVERAGE		6.0	4.3	****	****	13.0	113.	11.4	99.	****	****	9.47	9.04	6.7	4.6
50	12 11 77	1.2	0.2	****	****	12.2	97.	11.5	91.	***	***	9.37	9.12	5.4	3.8
50	12 12 77	1.9	0.3	****	****	12.8	103.	11.4	89.	***	***	9.56	9.12	6.2	4.5
50	12 13 77	2.6	1.0	****	****	12.6	103.	10.9	88.	***	***	9.37	9.05	6.1	4.6
50	12 14 77	2.7	1.9	****	****	11.7	95.	11.4	93.	***	***	9.18	8.67	7.2	5.3
50	12 15 77	4.0	2.3	****	****	11.6	97.	10.6	87.	***	***	9.18	8.93	6.9	5.6
50	12 16 77	4.6	3.4	****	****	12.5	106.	10.9	92.	***	***	9.12	8.80	7.0	5.8
50	12 17 77	4.7	3.9	****	****	13.3	113.	11.8	100.	***	***	9.12	8.80	6.7	5.8
EXTREME		4.7	0.2	****	****	13.3	113.	10.6	87.	****	****	9.56	8.67	7.2	3.8
AVERAGE		3.1	1.9	****	****	12.4	102.	11.2	91.	****	****	9.27	8.93	6.5	5.1
51	12 18 77	4.7	4.5	****	****	12.8	109.	10.8	91.	***	***	8.99	8.05	7.3	5.9
51	12 19 77	4.8	4.6	****	****	11.0	93.	10.6	90.	***	***	8.11	7.92	7.6	6.3
51	12 20 77	4.9	4.4	****	****	11.1	94.	10.4	89.	***	***	8.11	7.30	8.6	7.2
51	12 21 77	5.0	4.6	****	****	11.4	97.	10.6	90.	***	***	8.36	7.61	8.6	7.4
51	12 22 77	5.4	4.8	****	****	11.6	100.	10.5	90.	***	***	8.42	7.86	7.6	6.4
51	12 23 77	5.3	4.0	****	****	****	****	****	****	***	***	8.17	6.62	6.9	5.6
51	12 24 77	5.1	3.9	****	****	****	****	****	****	***	***	6.99	6.56	6.4	4.9
EXTREME		5.4	3.9	****	****	12.8	109.	10.4	89.	****	****	8.99	6.56	8.6	4.9
AVERAGE		5.0	4.4	****	****	11.6	99.	10.6	90.	****	****	8.16	7.42	7.6	6.2
52	12 25 77	5.5	4.6	****	****	****	****	****	****	***	***	6.74	6.50	7.2	5.7
52	12 26 77	4.9	2.8	****	****	****	****	****	****	***	***	6.74	6.50	6.4	4.6
52	12 27 77	3.6	1.6	****	****	****	****	****	****	***	***	6.81	6.56	7.0	5.4
52	12 28 77	3.7	1.9	****	****	****	****	****	****	***	***	6.93	6.56	6.7	5.2
52	12 29 77	4.3	2.5	****	****	****	****	****	****	***	***	6.87	6.74	7.7	5.5
52	12 30 77	4.0	2.3	****	****	****	****	****	****	***	***	6.87	6.62	6.8	5.9
52	12 31 77	3.9	2.6	****	****	15.1	123.	14.2	114.	***	***	6.81	6.56	6.3	4.6
EXTREME		5.5	1.6	****	****	15.1	123.	14.2	114.	****	****	6.93	6.50	7.7	4.6
AVERAGE		4.3	2.6	****	****	15.1	123.	14.2	114.	****	****	6.82	6.58	6.9	5.3